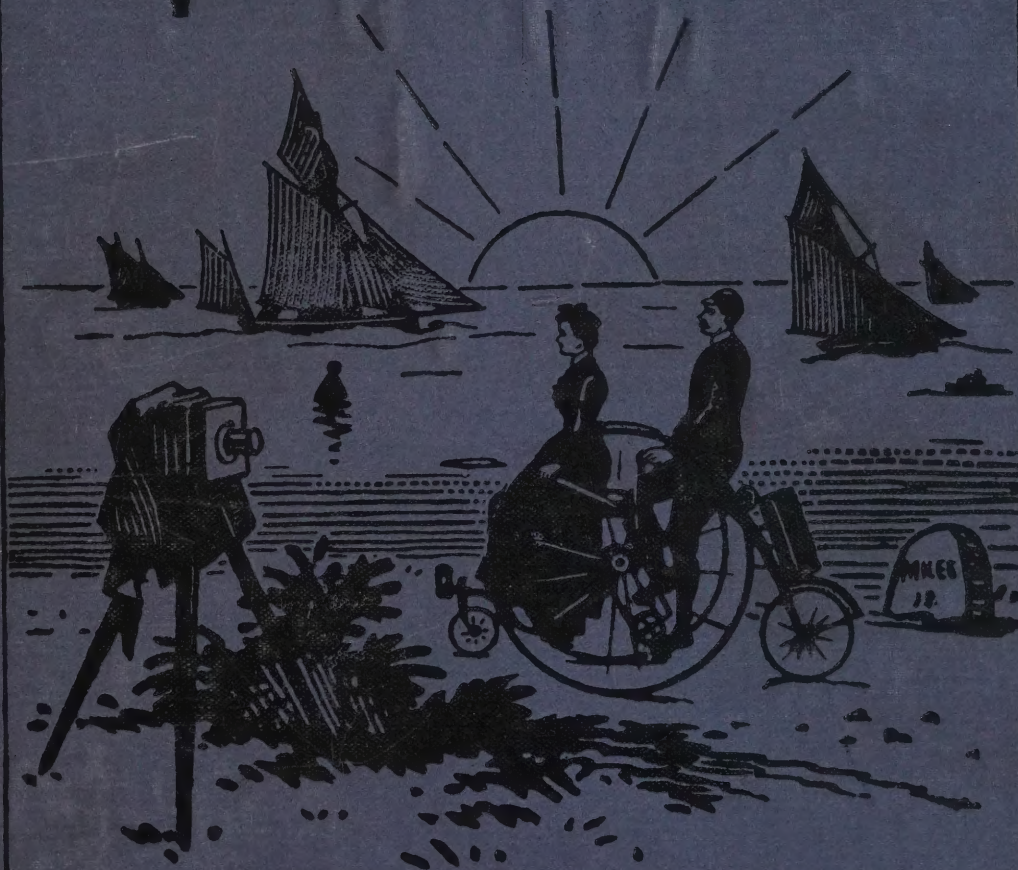


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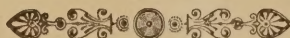
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# The AMATEUR PHOTOGRAPHER

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FRIDAY, JANUARY 2, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

[Members of the Editing staff are "At Home" on Tuesday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]

YESTERDAY we entered upon a new year, and we heartily trust that it may prove a prosperous one to the readers of the AMATEUR PHOTOGRAPHER, who are now to be found in every part of the inhabited world. It is possibly a hackneyed use of a good song, still we cannot refrain from quoting two lines from Tennyson's "In Memoriam"—

"Ring out the old, ring in the new,  
Ring out the false, ring in the true."

There is much that is false in photography, false to nature, and false to art. We shall, in the coming year, do our best to eradicate this falseness by devoting considerable space to the publication of articles upon the language, rules, and teachings of art in its application to photography. For this purpose it is proposed to take as examples the work of past masters in drawing and painting, and as far as possible to make reference to pictures which are known to many of us, and are accessible to all, as, if our readers cannot examine the originals, at least excellent copies or engravings of most of those that will be referred to are within their reach.

This week we publish the first of a series of articles upon "Composition, Light and Shade," by Mr. H. P. Robinson. These articles are based upon "Burnet's Essays," and we shall reproduce a great many of the examples given, so that our readers will have a practical guide, certainly, to the different forms of composition. Next week we shall commence a series by the Rev. F. C. Lambert, M.A., "Studies in Art for Photographers," in which they will be instructed in "art language" for the expression of thought and as a teacher of the grammar, method, and application of art principles to photography. This series will be illustrated with reproductions of paintings by artists of renown who have won their laurels, and whose works are an ever-living testimony to their love of the beautiful.

In practical photography Mr. C. H. Bothamley, F.I.C., F.C.S., will continue "Photographic Chemistry;" Major J. F. Nott, "Photographic References;" Mr. C. J. Leaper, F.C.S., commences a series on the "Construction of Lenses, and their Uses;" Mr. Andrew Pringle will deal with "Photo-Micrography." The Rev. T. Perkins, M.A., writes a short set of articles on "Photographic Work for the Winter Months;" Mr. Valentine Blanchard will conclude his series of admirable articles upon "Stereoscopic Work,"

and Mr. W. Jerome Harrison, F.G.S., will continue the chapters upon "Instantaneous Photography."

The foregoing will, we think, satisfy our readers that we intend keeping up the literary standard of the AMATEUR PHOTOGRAPHER.

The general news will be kept close up to date, and, notwithstanding all new bidders for public favour, keep first. We start a new column, "Notes for Novices," a "Lantern Slide Exchange Column," on identical lines to the Sale and Exchange Column, except that all entries are free; all we ask our readers to do, is to make their announcements as short as possible; one insertion only will be allowed for each announcement.

Arrangements have been made with a band of workers to answer "Queries" in the next issue to that in which the questions are asked, so that any question appearing this week will be answered next week. Another important addition to the work to be done in the editorial department is testing and reporting upon photographic apparatus, etc.\*

- (1) Testing and reporting on lenses.
- (2) Testing and reporting on plates and bromide paper.
- (3) Testing exposed plates.
- (4) Testing shutters.
- (5) Testing coloured glasses and media for lanterns and dark-room windows.
- (6) Reporting on apparatus bought through the "Sale and Exchange Column."

We shall give a full report in every case, and will, on application, furnish further particulars as to the work covered by the tests, etc. All communications must be endorsed "Testing Department."

The scheme for the year's AMATEUR PHOTOGRAPHER Competitions is definitely settled, the dates given below are those upon which the competitors' work must be actually received, i.e.:—

"AMATEUR PHOTOGRAPHER" COMPETITIONS, 1891.

Jan. 22.—Monthly Lantern Slide (Landscape and Seascapes).

31.—"Seven Ages of Man."

Feb. 2.—Monthly Photographic (Animals and Instantaneous Subjects)

19.—Monthly Lantern Slide (Portraiture and Figure).

\* In the case of Nos. 1, 2, 3, and 5, a uniform fee of 2s. 6d. will be charged for each report. No. 4, 5s.; No. 6, a minimum fee of 2s. 6d., or 2½ per cent. upon the sale price of the apparatus.



- March 2.—Monthly Photographic (Snow and Hoar Frost).  
 „ 19.—Monthly Lantern Slide (Animals and Instantaneous).  
 April 2.—Monthly Photographic (Inland Scenery).  
 „ 16.—Monthly Lantern Slide (Architecture—Interior and Exterior).  
 May 2.—Monthly Photographic (Hayfield).  
 June 1.—Monthly Photographic (Village Life, Farming, etc.).  
 „ 17.—Public Schools (particulars to be announced).  
 „ 30.—\*Photography at Home (particulars to be announced).  
 July 1.—Monthly Photographic (Out-of-door Figure Subjects, Groups, etc.).  
 Aug. 1.—Monthly Photographic (River Scenery).  
 „ 22.—\*Ladies' Photographic (particulars to be announced).  
 Sept. 2.—Monthly Photographic (Harvesting).  
 „ 24.—Monthly Lantern Slide (Landscape and Seascape).  
 „ 30.—\*Annual Lantern Slide Competition (particulars to be announced).  
 Oct. 1.—Monthly Photographic (Enlargements).  
 „ 8.—\*Public Schools (particulars to be announced).  
 „ 22.—Monthly Lantern Slide (Portraiture and Figure Studies).  
 „ 30.—\*Annual Stereoscopic Slide (particulars to be announced).  
 Nov. 2.—Monthly Photographic (Inland Scenery).  
 „ 19.—Monthly Lantern Slide (Animals and Instantaneous).  
 Dec. 1.—Monthly Photographic (Seascape and River Scenery).  
 „ 17.—Monthly Lantern Slide (Figure Studies and Humorous Pictures).  
 „ 31.—\*Holidays with the Camera (particulars to be announced).

All prizes will be in the form of medals from the AMATEUR PHOTOGRAPHER's several dies. No prize winner will be allowed to compete again for a medal of the same value as that awarded him. The AMATEUR PHOTOGRAPHER Monthly Competitions are for the encouragement of beginners and those who have never entered a competition or exhibited their work. In the competitions marked with an asterisk, special or "progressive" medals will be offered for competition by past prize winners.

The "Public Schools" Competition is quite a new feature in our programme, and has been determined upon owing to the fact that, in connection with almost all our large public schools, photographic societies have been formed. In connection with this competition we hope to enlist the sympathies of masters as well as pupils; of course, the competitions will be open only to the latter. The success of the first "Ladies' Photographic Competition" prompts us to announce another to be held this year.

We hope within a month to have all the entry forms prepared, and applications for them will receive attention.

Monthly competition photographs and lantern slides will be loaned to photographic societies and others, every application to be accompanied by a *packing fee of one shilling*.

—•••••

In the above we have very briefly sketched out our programme for the year of grace 1891, and will refer to the work done in connection with the advancement of photography in general, and by ourselves in particular, during the year just ended.

—•••••

NOTHING very startling has been done in connection with the practice of photography during 1890. The transparent rollable film of the Eastman Company has been brought to a state of great perfection, and the vast improvement in the

"Kodak," especially those of a larger size, augurs well for the very general use of the film in the coming year. Other films are in the market, but they are of cut sizes, and the greatest difficulty to their more general use is the want of a good and simple changing box. The one invented by Mr. E. Ferrero has, we believe, had a large sale, but the necessity of using a sleeve militates against its general adoption. It is a want, and doubtless prominence in these pages will set some inventive mind to work, and we shall soon have an automatic arrangement for changing films.

Eikonogen has entered the lists against hydroquinone as a developer, and many who strongly upheld the latter are strong in their praises of the former. Others use what they are pleased to call "hydro-cum-eikon."

Instantaneous work is still practised extensively, and Mr. Louis Meldon has given us another picture which runs his "Diver" very close, "A Cycle Race," taken in "1/100 of a second on a Paget xxxxx plate." Hand-camera work has been the hobby of many during 1890, and there is every probability that this year will see even more work of this kind done. The use of small cameras has given an impetus to enlarging, and there are few amateurs who are working hand-cameras or quarter-plate cameras who do not possess an enlarging lantern, or who have not rigged up a home-made enlarging apparatus. The newest form of lantern is that patented by Mr. Shenstone, of Colchester. Those who have used it are delighted with the simplicity and ease with which it is worked.

Lantern slide work is exceedingly popular, both for purposes of amusement and as an educator. In connection with the former it has been our privilege, through the liberality of our readers, to "loan" hundreds of slides, which have gladdened the heart of many to whom a landscape in all the loveliness of nature is unknown. As an educator, Mr. C. H. Bothamley's article, contributed to the *Photographic Quarterly*, has set thoughtful men thinking, and a "Magic Lantern Mission" is one of the outcomes. Professor Miall, of the Yorkshire College, Leeds, has been the pioneer of the use of the lantern in daylight, with the result that expensive diagrams are practically unknown in the college. The illustrations in a text-book are copied in the camera, and lantern slides made of them. These are properly titled, indexed, and kept in a cabinet for reference, so that the Professor has only, as he is giving his lecture to the students, to turn up the slides needed to illustrate his remarks, and in a corner of the lecture hall, where the daylight is screened off, they are projected on to a screen, or, as Paddy would say, on to a white blackboard, and are in full view of, perhaps, some 200 or more students.

For ourselves, we find the making of lantern slides to have become so general that we are starting monthly competitions during the first four and last four months of the year.

The contributed articles in the AMATEUR PHOTOGRAPHER have been maintained at a high standard, the best writers being secured, and the most popular subjects treated. The correspondence columns have contained letters upon matters of general interest, and the news of the photographic world always given first-hand and well up to date.

Photographic exhibitions have not been so numerous in the latter part of the year. There were several in the first four months, notably, Keighley, Royton, Hastings, Kidderminster, Belfast, etc. The Crystal Palace Company held a good photographic exhibition in March, but it did not receive the support at the hands of the trade that it certainly deserved. Consequently, we understand it is not intended to hold an exhibition at Sydenham this year. Under the



auspices of the photographic section of the Chamber of Commerce, an exhibition was held in the Drapers' Hall, which was strictly limited to photographic dealers and the work of professional photographers. It was, we believe, largely attended; the apparatus and pictures exhibited made a grand show in the beautiful hall of the Drapers' Company. In the latter part of the year we have had exhibitions at Manchester, Wolverhampton, Edinburgh, and, of course, Pall Mall.

The Photographic Society of Great Britain have gone into new quarters, and with their removal from 5A, Pall Mall East, the much-respected Assistant Secretary, Mr. Edwin Cocking, severs his connection with the Society after a long and faithful service. The Society's rooms are at 50, Great Russell Street, and more accommodation is there afforded than the Society has ever before possessed. The photographs sent to the Exhibition have been discussed at considerable length in these columns. The new school, or schools, nearly cleared off all the medals—why, to many, remains one of those never to be cleared up mysteries. The chief claim that we can find advanced is that they resemble "sepia drawings." Some go farther, and say strong things about them; but this is a time of "peace and goodwill," so we will forbear, and not say unpleasant things. If anyone wishes to have what in our mind is the best criticism upon the Pall Mall Exhibition, let him read the paper contributed by Mr. P. H. Newman to the West Kent Amateur Photographic Society, and published in our issue of the 19th ult.

We must now refer to the scheme for the establishment of a Photographic Institute, and claim that, whatever form it may ultimately take, it will owe its origin, as do many of the forward steps made in photography during the last five years, to the correspondence columns and articles that have appeared in the columns of the AMATEUR PHOTOGRAPHER. We are delighted to find that the labour and thought we expended on the subject during last winter has been taken up by some of our leading men. The Photographic Institute must be formed by united effort; and those who read the January number of the *Photographic Quarterly* will find that one means by which it is hoped the scheme may be helped is the holding in 1892 of an International Photographic Exhibition at Earl's Court, on the same gigantic scale as the Inventions, Colonial, and Fisheries, the profits from which are to be set aside for the Photographic Institute. The article is most ably written by Major J. F. Nott, who, in conjunction with Mr. Alfred Maskell, is working with a small but strong Committee, and making the preliminary arrangements in regard to the Photographic Exhibition, 1892.

We are very pleased to make known in a few words such a grand proof of the advancement in photography which is evidenced by the fact that such an exhibition is in contemplation. We wish those gentlemen every success, and we have little doubt that they will carry out their proposals, notwithstanding the enormous amount of work before them.

This month sees the Camera Club housed in their new premises. We know of no art or dilettante club that will have a better house than the members of the Camera Club. A member said to us only to-day, "It will be a nice club," meaning that, although a photographic club, it will have the comforts and luxuries of a first-class social club. We are not prone to "run" even the Camera Club. These columns did that to repletion in the early days, but we do strongly advise those who intend to join to take advantage of the concessions made to the first hundred members to be elected in this year. See "Our Views" last week.

The Club have done some good work in connection with their

Conference, and also the One-Man Exhibitions that have been held. The "Thursday Evenings" in the new rooms will be very popular. Latterly, the rooms in Bedford Street have been dreadfully crowded, and many have been obliged to stay away, but now there will be ample accommodation, and, we feel sure, large attendances.

The Photographic Convention had a fairly successful meeting at Chester, under the admirable presidency of Mr. C. H. Bothamley. This year the members will visit Bath. Mr. Bedford, jun., has been elected President. It may surprise some to learn that Mr. Andrew Pringle, the father of the Convention, first brought the matter under the notice of the photographic world in the AMATEUR PHOTOGRAPHER, in a letter addressed to us and published in our issue of the 22nd January, 1886, headed "Congress for Amateur Photographers, etc."

Of the now nearly 200 photographic societies formed we can only say that they are all doing good work. So many have been started during the year past that it is practically impossible here to enumerate them. They find us ready to help them in every possible way, perhaps more through the medium of the *Photographic Reporter* than in these pages. The references we are able to give here are, of necessity, very brief, owing to the many and ever increasing calls upon our space.

The books on photography that have been published in the year are not numerous. We would note the following:—"Casket of Photographic Gems" (Ingles Rogers); "Photographic Reproduction of Drawings" (Waterhouse); "Amateur's First Hand-Book of Photography" (Ellerbeek); "Photogravure" (Wilkinson); "Stereoscopic Manual" (Chadwick); "Modern Photography for Amateurs" (Eaton Fearn); "Photo-engraving, Photo-litho, and Collotype" (Wilkinson); "Burton's Modern Photography"; "Photography for Amateurs" (Hepworth); "Lantern Slides, and How to Make Them" (Dresser). Our publishers, Messrs. Hazell, Watson and Viney, Ltd., have done something to swell the list, i.e.:—"Prize Pictures" No. I., reproductions of photographs by Alex. Keighley; "Prize Pictures" No. II., Paul Lange's Norway; "Holiday Work," "Home Portraiture," "Names we Love, and Places we Know," "Book of the Lantern" (third edition); "Dictionary of Photography" (second edition); "Art Photography," "Platinum Toning," "Experimental Photography," "Art of Retouching," "A Tourist's Equipment," etc., etc.

The *Photographic Quarterly* stands high in the estimation of all interested in photography. The articles are contributed by men of high culture, and we make the statement with considerable pride that it ranks as the first photographic publication published in the United Kingdom. We see no difficulty in keeping up the high standard of the contributions. The sensation of the year in connection with it has been the chromo-collotype published in July last.

The *Photographic Reporter* has filled a gap in photographic literature, and has a large circulation. We believe our effort to issue the *best* monthly illustrated magazine is appreciated.

The AMATEUR PHOTOGRAPHER Annual for 1891 will be ready for publication early in February. It will be published at one shilling, and is upon distinctly new lines.

We have wandered on far beyond our intention, and must close these rambling comments upon the work of the future, and the past. The one lies all before us, and the other nothing can recall. In some matters discussed in these columns we have been injudicious, and admitted, perhaps endorsed, opinions that it were better had never



been expressed. If such has been the case, we beg to offer our sincere regret. Whatever has been inserted in these pages has been, as we at the time thought, for the benefit of photography, and certainly for the benefit of our thousands of readers who practise photography not as a means of livelihood, but as a pastime which helps them to view nature in all her loveliness, and to seek out upon the face of our beautiful Mother Earth fresh spots to endear her to us.

—♦♦♦—

THE members of the West London Photographic Society are going to hold a conversazione in the Lecture Hall, Hammersmith Broadway, on the 9th and 10th inst., on which occasion there will also be an examination of members' work. In the examination there is to be no classification of pictures, and there is no limitation as to size or subject. We note, however, that no picture which has been previously exhibited or taken a prize will be eligible for competition.

—♦♦♦—

WE regret to announce a sad trouble that has befallen Mr. J. Traill Taylor, Editor of the *British Journal of Photography*, in the loss of his wife, who died on the 23rd ult., from pneumonia, after only two days' illness. Many of our readers will join us in offering Mr. Taylor very sincere sympathy.

—♦♦♦—

IN another column we publish a letter upon the forthcoming Photographic Exhibition to be held in Vienna. We have felt it our duty to insert the letter, which is from a gentleman of good standing and a most accomplished photographer. If the statements made prove to be correct, especially in regard to the conditions under which photographs are allowed to be entered as the work of the exhibitor, we can give no further support to the exhibition, and feel sure that our best amateur workers will not send out their own work to be entered in competition with photographs that have been worked by professional photographers. We have been led to believe that the Vienna Exhibition was to be the exhibition *par excellence*, and to lead and guide future exhibitions in this country. Our columns are, of course, open to reply; in the meantime we should advise intending competitors to hold their hand, before sending photographs to Vienna.

—♦♦♦—

ANNOUNCEMENTS in the "Lantern Slide Exchange Column" should take the following form:—

"Will exchange four slides, Thames views, for four taken on the beach at Hastings. Brown, 4, Pickle Street, Capsicum."

The column will be found most useful in making up sets and also in illustrating holiday tours. All announcements must be received before Tuesday morning.

—♦♦♦—

THE list of competitors in "Holidays with the Camera" will be published next week.

—♦♦♦—

IN another column we publish the awards made by the judges upon the photographs, etc., exhibited at the Edinburgh Photographic Exhibition. It will be noted that a large proportion of the medals go to Scotch workers; this was to be expected, as the photographers south of the Tweed have not supported the Exhibition as they might have done. We congratulate the judges on their award, and can sympathise with them in the enormous amount of work they had

to get through, especially as the hanging has been arranged rather to secure artistic effect than to assist the judges in their very arduous duties.

—♦♦♦—

A CORRESPONDENT from St. John's, New Brunswick, writes: "I suppose your competitions are open to subscribers out of England?" Certainly they are. We have by the same post received an application from Lagos, West Africa, for entry forms; the writer adds: "I have been taking your paper for some time, and find it simply invaluable, the 'Queries and Answers' columns very often just suiting my own case; and as I do a good deal of instantaneous work, using a No. 5 Kodak, the articles on 'Instantaneous Photography' possess a particular interest."

As the programme for the year's competitions has been arranged, we have no doubt we shall have a great many more entries from abroad, especially from India, the English colonies, and the United States.

—♦♦♦—

### ECONOMICAL DEVELOPING DISHES.

THE well-to-do amateur is notoriously unsparing in his outlay so long as the money spent makes his hobby hurry more swiftly in pursuit of success. Unfortunately, there is a large majority of individuals who have to keep their expenditure on photographic apparatus, etc., within very narrow limits; to these, and also to the rigid economists, the following hints upon developing dishes are addressed. It is also to be remembered that there are many men of means who, living in out-of-the-way parts of England, or still more outlandish regions in the four quarters of the globe, are often puzzled to know what to do in the absence of porcelain or vulcanite dishes.

In the remarks which follow, dishes over half-plate are generally referred to. Perhaps the most sweetly simple form of dish is that which is made by utilising the print itself. In order to do this, the paper after printing is folded about three-quarters of an inch from each edge (see fig. 1), the dotted lines showing where the folding is effected. The four sides being bent at right angles to the centre portion of the paper, we get a tray as shown in fig. 2; the corners, as A, being held together by any simple form of metal or wooden clip, which can be readily made and easily fixed, and needs no further description. As a rule, this form of tray is only suitable where the paper used has considerable substance, *e.g.*, Eastman's thick paper (C) would answer in cases where the thin (A) would fail. Again, the power of the paper to resist the tendency of the bath to percolate must be taken into consideration.

The percolating force which a liquid will exert on the pores of the paper is directly as its depth, and is not affected by its surface area; neither will the pressure on the side be affected by the superficial area; but the side itself is weaker to resist any pressure in proportion to its length. From these it is apparent that where a thin layer of fluid, whether developing, clearing, or fixing solution, is to be used, there is little or no fear of any percolation where ordinary care is employed; more especially is this so inasmuch as most of the papers amateurs work with are practically waterproof—for instance, bromide paper—but some, such as the ferro-prussiate blue paper would probably not hold water for any length of time.

In using the print as its own dish it is necessary to employ a piece of wood having a flat even surface, or some other convenient support, measuring slightly larger than the improvised dish; by means of this the print may be rocked and the solution poured off.

Objection has been taken to the above method of



doing without a dish for the following reasons:—(1) It is not economical, as a larger piece of paper than is otherwise necessary has to be used; (2) it is too troublesome and risky. As regards (1), the paper need not measure more than one inch and a half each way in excess of the normal size. Where the print is larger than the amateur usually works, and only one or two impressions are needed, it is cheaper and more convenient to waste a small strip of paper than to buy two or three huge dishes; it is to be remembered that what is lost in paper may often be saved in the smaller amount of developer needed. In any case, for experimental purposes, or where time is an object, the foregoing device is of undoubted value. Respecting objection (2), nothing is to be said, except that we live in an age of manipulative decrepitude. "In the brave days of old," *consulé Planco*, or, in plain English, when Albert was Consort, photographers were made of sterner stuff. Picture an old-fashioned wet collodionist talking of the trouble and risk involved in the use of the above adaptation! Those who are naturally nervous or

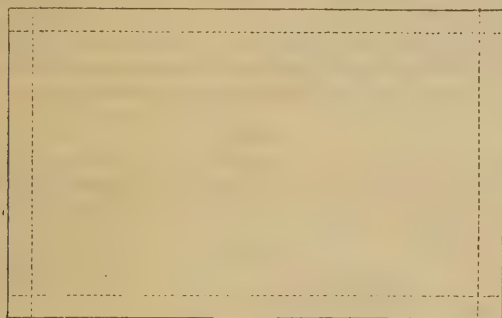


FIG. 1.

clumsy may to a large extent insure themselves against failure by fastening in advance strips of wood to the support in such a manner and of such width that they hold in position the paper sides of the extemporised tray. Indeed, in all cases where the print is of extra large size, or where it has to be treated with a number of solutions or with a single bulky solution, the above means should be resorted to.

A further evolution of the above contrivance is the employment of a convenient water-proofed material out of

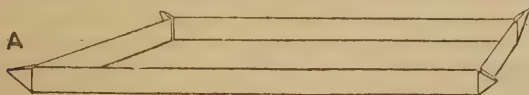


FIG. 2.

which to construct a dish; perhaps the most desirable substance being the Willesden waterproof paper. This is folded exactly as shown in figs. 1 and 2, but the sides should be made a little deeper. Willesden paper can be bought of various thicknesses and in small lengths. The writer has for several years used trays made of this material for developing negatives (pyro) and bromide paper (ferrous oxalate, acetic acid, and hydroquinone) without detecting any injurious action due to the material on negative, print, or developer; the same remark applies to fixing bath (hypo). Large-sized trays require the support of a piece of wood in order that they may be safely lifted.

The folding trays manufactured by Messrs. Tylar are made on the above system, and can safely be recommended for travelling or occasional use.

### A YOUNG PHOTOGRAPHER.

THE following is a short account sent us by Mr. S. Stamp, of Stockton-on-Tees, of how the photograph we reproduce was secured:—"I had the youngsters in the garden, taking their photographs. The little lad seemed to take particular notice of all I did, although he asked no questions; but the next morning he brought me his empty toy box and a tin lid, asking me to fasten the tin lid on to the box. He then carried it into the yard, took



dollie, stools, and his little sister. Having posed them, he hunted up a cloth to focus with, and then, without having asked advice or help, he set to work to take their photographs. Seeing what he was after, I got my camera, and took a drop-shutter photograph. The sitter is aged  $2\frac{1}{2}$ , and the operator  $3\frac{1}{2}$  years. My wife says she is afraid that he is going to be a chip of the old block."

**The Camera in Greenland.**—The best book of travel which we have read for a long time is Dr. Nansen's "First Crossing of Greenland," published by Messrs. Longmans, in two bulky volumes. The intrepid young Norwegian writes (vol. i, p. 69), "A necessary addition to the outfit of a modern exploring party is, of course, a photographic apparatus. I took a little camera with me to use with the theodolite stand, two roll-holders for stripping films, and ten rolls of twenty-four exposures each. The camera alone weighed two and a quarter pounds. I made about 150 exposures, and on the whole was well satisfied with the apparatus and the results. Glass plates would, of course, have been much too heavy and inconvenient. I also had two red lamps, one of glass and the other of paper, for changing the rolls, and a few stearine candles to use in them." The illustrations in the book are mostly drawn from photographs. Dr. Nansen is to lead an expedition to the North Pole in 1892, when he expects to have an experience of at least two years in taking snow pictures.

**Photography in Natural Colours at last!** or, at least, lantern slides in natural colours, have been actually obtained, if we are to believe an article by Mr. A. W. Scott in one of the "Annals." Unfortunately, so little is said that one is left delightfully in the dark, and the only ray of comfort is that slides with the natural colours will be shortly shown in London. Mr. Scott has invented a special camera, the "Verak," which presumably does the trick, as Mr. Scott has obtained "bill-posters' hoardings ablaze with coloured bills, flower gardens, private houses, shops with coloured wares exposed for sale, fields and distant hills, buildings, and sky effects. Exposures varied from 2 to 12 secs. in sunlight." Now, all this important discovery was made in a chapel, when the sermon could not be heard; and a peculiarity in the pulpit and a fortnight's study of the solar spectrum gave Mr. Scott the key to success. He had found out the nature of the primary colours, thrown over all previous ideas, formed a new theory (!), and lo! photography in natural colours was *un fait accompli*. If you, dear reader, know of a chapel where the sermon cannot be heard, and with "a peculiarity in the pulpit," by all means go there, and find out photography in natural colours.



## Negatives and Positives.

AUNT BELINDA was returning home the other evening, after having taken part in a convivial meeting of the "Society for the suppression of *back sliders*," and by chance stepped unwarily upon the track of some of the unsuppressed. The result was, as she expresses it, that she "sat down before she did sit down," and now she says she quite understands the meaning of a *dark slide*.

At a "free and easy" meeting of the "Bell Botelle Artists," otherwise known as the society of "cork drawers," various guesses were made as to the true interpretation of the familiar letters "A. P." 'Arry 'Awkins says it stands for the 'appy party who reads that popular Journal. Other suggestions were, "always polite," "artistic and practical," etc. The winner wisely waited till everyone had outvied each other, and said the true interpretation includes them "all and particular." Thus it may be seen that the noble society of cork extractors and delineators are wise in their generation. (P.S.—The wag of the society says his artistic talent lies chiefly in drawing his salary. The cynical one says that none of the other fellows ever draw anything except the long-bow).

THE usual annual and jovial invitations have gone forth. "Mr. Sol presents his compliments to Ho. Sophos, Esq.,"\* and desires his company to assist in partaking of a repast, of which the accompanying menu may be taken as provisional:—

MENU.  
 POTAGES.  
 Consommé de Longfocus.  
 Pôtage à l'Achromatique.  
 POISSONS.  
 Filets de Collodion (frites).  
 St. Maddox au Gratin en Gélatine.  
 ENTREES.  
 Côtelettes à la Tombé-drop.  
 Croquettes de Blinde-roulé.  
 RELEVES.  
 Poulets, Sauce de Quinol.  
 Langue à l'Oxalate.  
 Bœuf à l'Anglaise, Sauce de Pyro.  
 ROTS.  
 Faisans aux Hypo-Soude.  
 RELEVES DE ROTS.  
 Mayonnaise du papier-albumine.  
 Aspics de Platinotypique.  
 ENTREMETS.  
 Pouding Stickphaste.  
 Gelée de Starch.  
 FROMAGE-CARTON.  
 Teinte d'Inde. Marque de Plat.  
 DESSERT.  
 Médailles d'Honneur.

We may say that we know Mr. Sol to be a "good old so(u)l," and are sorry that (smoky) circumstances, over which we have no control, prevent our seeing as much of him as we could wish. Anyone who is fortunate enough to receive an invitation will be hard to please if he fails to find the above programme insufficient for him.

\* In case anyone receives this invitation and does not recognise his own name when spelled in that way, we may explain that it is Mr. Sol's polite way of expressing "The wise one who reads the A. P."

SAM WELLER has explained to us some of the mysteries of love-letter writing. Possibly at this festive season some of our photographic friends are desirous of addressing the object of their devotions, and are at a loss as to how best to express their sentiment in forcible and picturesque language. The accompanying letter has been placed at our disposal, by the writer, as a thank-offering for having produced the much-desired reply:—

DEAREST MISS . . . —The image of yourself has been *focussed*, with the *smallest diaphragm*, on the screen of my affections for so long, that I venture to ask you to share my humble lot. My outfit at present consists of *three gross* a year, together with a freehold camera residence, *long-focus garden*, brass-bound furniture, with every possible movement. I therefore venture to hope that you will consent ere long to *develop* and *fix* your image by my side, that my hitherto solitary *plate-holder* may be replaced by a conjugal *roller slide*. My *intensified* admiration of your many qualities of *brilliance*, *sparkle*, and *pluck* ought not, I am sure, to remain as a *latent image*, but be *transferred* to the *support* of my *rapid symmetrical* regard. There only now remains your consent to unite us in a *brilliant combination print*, free from *blisters*, *astigmatism*, or *diffusion* of interest.

I can only regret that the *refraction* of my words fails to convey to you the *ortho-chromatic iridescence* of my daily *intensified* admiration, and therefore hope you will favourably regard them with the *lens* of good-will, free from *chromatic aberration*, *dispersion*, or *distortion*.—I remain your very affectionate and *achromatic* . . .

REPLY.

DEAREST MR. . . . —The *warmth of tone* of your note I estimate in its true *values* and *breadth of sentiment*. I can only, therefore, reply, "Take me—for better or for worse—*Negative or Positive*."—Yours . . .

SEQUEL.

On the . . . st, at St. Daguerre's . . . to . . . by the *instantaneous process*. [No *cartes-de-visite*.]

**Daguerre Tomb Restoration Fund.**—We have to acknowledge the receipt of 12s., collected at the last ordinary meeting of the members of the Lewisham High Road Camera Club. The Secretary kindly says another collection will take place at a more crowded meeting. We hope other societies will help us, especially when the 1890 "Prize Slides" are shown.

**Consumption and Photography.**—It seems inevitable that when one man makes a brilliant scientific discovery someone is sure to claim to have made exactly the same discovery years ago, and this is well seen in the case of Koch's consumption cure, as one of our transatlantic cousins claims to have used exactly the same method of cure fifteen or twenty years ago; unfortunately, however, for this pretender's claim, he can adduce no further evidence than his bare word. However, this is not what we intended to note, but in the *Photographic Times* of New York, for November 28th, appears a letter, over the signature of C. L. Lochman, asking for information from old daguerreotypists as to the curative properties of bromide and iodide of mercury in the incipient stages of consumption, his experience leading him to believe such mercury compounds have some such curative action. In the issue of December 12th of the same paper, "an old daguerreotypist" states that in 1859 a young man who showed all the symptoms of incipient consumption apprenticed himself to a New York daguerreotypist, and that after three months' work his health visibly improved, and that he is now a "hale and hearty old man." It is stated also that names and facts in this and two other cases can be given. It is by no means improbable that the inhalation of nascent bromide and iodide of mercury might prove useful in cases of lung trouble, as mercuric chloride in the form of solution has long been recognised as one of the most powerful of all germicides. Unfortunately, however, any mercurial cure is attended by some inconveniences, which will not be without effect in its adoption or rejection, as workers with mercury, such as mirror-makers, who inhale mercury in a state of vapour, soon lose their teeth, and such minor appendages as their hair. Another rival to Koch has appeared, as Dr. Petit presented to the Society of Practical Medicine some lymph identical in appearance, and, it is also stated, in action on tuberculous animals to the original. This, if true, is fortunate, as Koch has failed to manufacture his lymph in small quantities, and his own stock is also destroyed.



## Letters to the Editor.

### PHOTOGRAPHIC ART TENDENCIES.

SIR,—May I be allowed a little space in your next issue to raise a voice from the humble obscurity of "amateurism" in words of grateful thanks to Mr. Philip H. Newman for his splendid lecture before the West Kent Amateur Photographic Society, and published in your number of December 19th, 1890, a lecture from which a decalogue of axioms might be culled, which ought to be printed in letters of gold and hung up in the meeting rooms of every photographic society in the kingdom; a lecture, almost every word of which sinks into one's soul with a feeling of restful satisfaction that the "whole duty of the photographer" should be made so plain, and which—if anything can—ought to snuff out the false lights of the "naturalistic" school, now so long flaming in the sight of photographers of all grades; a lecture which for terseness, simplicity, and convincing argument we have not seen in print before, and which carries its convictions home over the tide of squabble and recrimination which have preceded it.

There are, however, one or two points which, if I may be allowed, I would like to put before Mr. Newman in another light, that of a practical worker of over thirty years' standing, and which—as he starts on the assumption of "not being a photographer, scarcely an amateur, and very much an outsider"—may not have occurred to him before.

(1) Printing Process. Mr. Newman considers that a fresh process of printing has yet to be invented which will perfectly supply the place of silver chloride in albumen in rendering the extreme beauty of range of tone undoubtedly possessed by our very old friend and ally, silver chloride. True it is that neither bromide nor platinotype papers do so, but has he ever seen and studied fine specimens of printing in "Autotype carbon" from good negatives taken *direct from nature* (not from pictures) with lenses by the best opticians, and with every care given to the production of good definition—not necessarily microscopic—such as he appears to admire most? If not, let him do so, and I feel sure he will be satisfied that all is to be found there that the artistic sense need wish for. I can assure him that I do not know any existing process—not even silver chloride in albumen—which can produce more delicate gradation of tone or such all-round artistic results. I am comparatively a novice at the process, having only worked at it for about six months, but the beauty of the results has astonished me. The gradation of tone, purity of colour, and *transparency of the shadow detail* are excellent, and after testing by duplicate prints from the same negatives, I am convinced that there is nothing to touch it when carefully worked.

Loss of transparency in shadow detail is not necessarily co-existent with a "matt" surface. It is so with platinotype and bromide work, but not with carbon.

The surface texture of carbon prints depends entirely on the surface of the "temporary support" which holds the "tissue" during development by "double transfer." If made on the ordinary "flexible support" supplied by the Autotype Company, the finished picture has a surface closely approaching that of moderately albumenised paper. If made on polished plate-glass coated with collodion, it possesses all the offensive glaze of "Aristotype" paper or of "enamelled" prints; but if made on the "smoothed" surface of opal glass, the print possesses a "matt" surface of great delicacy and purity, as soft and yet more beautiful than either platinotype or bromide, and yet with the peculiarity that the shadows are transparent and full of "atmosphere," which the other processes named cannot be said to possess; and the beauty of the process is enhanced by the fact that whilst platinotype prints demand a negative of a certain vigorous character to obtain the best result, carbon will properly represent the effect of *any style* of negative, but is seen at its best when the negative is full of soft definition combined with a proper gradation of contrast, which should not be too strong.

The only drawback to the "Autotype" process at present is the limited range of tints available to select from, as there is no "toning" or variation of tint possible during the process of printing. The tints produced by the Company (which can be constantly and readily obtained commercially) are all imitations of various silver processes and of platinotype, which being in such general demand appear to have set the fashion, and, of

course, their commercial productions are ruled by the demand. The range of tints are "engraving black" and "warm black" (both can be used as substitutes for platinotype); "standard brown" (imitation of a brown-toned silver print); "sepia" (so-called), a still redder variety, but it is not true sepia in shade, and is an almost exact match for "Vandyke brown" in water colour, which I think all artists will agree is not a pleasant tint for general landscape work, being too hot in tone. What is much wanted to place carbon landscape work on its best footing is a tint of *true sepia*—a tissue somewhere between the existing tints, especially as the popular taste seems more to incline to such a shade as compared with the tones of pure black shown by platinotype and bromide pictures. The "red chalk" and "moon-light blue" tissues are suitable only for special subjects.

(2) Negative processes. Mr. Newman states, "When I look back to the old collodion days, etc., it is a matter of surprise and great dissatisfaction that present facilities of operation have not allowed a much greater advance artistically than I find." I suppose I may be looked upon as a heretic or an old fogey behind the times when I assert as my deliberate opinion that the best gelatino-bromide plates in the market under the most approved state of development cannot "hold a candle" to a well conducted wet collodion process, as far as the special point of *artistic quality of result only* is concerned. It is not contained in gelatine as a *vehicle* to approach collodion in purity of texture and transparency, richness of deposit of metallic silver, and in roundness and gradation of definition. I worked at wet collodion on 12 by 10 plates for fifteen years prior to 1870, and I have prints (now twenty-five years old) from those negatives which prove to my great dissatisfaction that I have never been able to equal them since by any efforts with gelatine plates, and I do not expect that I ever shall. Greater sharpness is obtainable with gelatine, and the advantages of speed of exposure and the conveniences for use and transport are untold, but there was always this was one special point of advantage about wet-plate work, that you knew what you had secured in the way of pictorial result before you left the spot.

I have never yet taken a negative with which I have been so perfectly satisfied that I could say I could not improve upon it if I tried again, and there is just the crux where the excellence in pictorial result may be attributed to collodion, apart from the intrinsic merit of the silver image itself, if you did not think the plate quite up to the ideal standard you could always take another with very slight cost or trouble, and so correct your failings in the first in either composition, exposure, or manipulation, and this cannot be done with gelatine plates, because you cannot know your results until you get far from the spot, which may never be revisited; hence hundreds of plates prove just a little short of that best picturesque result one could have desired, if only they could be taken again under similar conditions. I go so far on this subject as to say that if I were a professional photographer whose status depended on the artistic quality of my landscape photographs, I would go back to wet collodion with all its drawbacks and impediments, and I rather fancy that if the opinion of such old "experts" as Mr. Bedford, sen., and Mr. G. W. Wilson, and others of their day were asked, they would agree with me on the "artistic quality" point of the matter, though not as to business convenience.

I therefore argue that the excellence of artistic result is not dependent on the modern dry plate, except so far as speed of exposure under certain circumstances, and convenience of transit are concerned—very much the reverse—and I should be pleased to give Mr. Newman ocular proof if he is in doubt, and a meeting could be arranged for the purpose.

With these remarks I again couple my heartiest thanks for the refreshment derived from his lecture as reported in the photographic press.—I am, etc.,

GEORGE BANKART.

\* \* \* \*

### GELATINE DRY PLATES.

SIR,—The following extract from Dr. Eder's "Handbuch" will show Mr. Burgess that at least the greatest authority on photography recognises his work:—

"Poitevin first published the use of gelatine as a vehicle for the silver salts in the negative process, in the year 1850. In this year he read before the Parisian Academy the description of his process, which consisted in mixing gelatine with iodide of potassium, and then sensitising in a silver bath. On the 30th of June, 1851, he presented an improvement of this process, by



means of which, by the employment of gallic acid, portraits could be obtained in 1 to 1½ minutes ('La Lumière,' 1851, vol. i., p. 89). Hadow described in the *Journal of the Photographic Society*, in May, 1854, a similar process, but used sulphate of iron for developing.

"Gaudin mentions the first emulsion of silver salts in gelatine.

"Gaudin had already stated in his first notice on collodion emulsion on Aug. 23rd, 1853, that he had instituted similar experiments with albumen and gelatine. (Gaudin says, 'J'ai fait des essais analogues avec l'albumine et la gélatine.' M. H. de Molard m'a dit avoir eu des résultats avec l'albumine.') In the year 1861 he described his process more accurately: he prepared an iodide of silver emulsion with excess of nitrate of silver, which he developed with tannin, or tannin and gallic acid ('La Lumière,' 1861, pp. 21, 25). On the 8th September, 1871, R. S. Maddox published a note on the preparation of gelatinobromide of silver emulsion in the *British Journal of Photography* (1871, vol. xviii., p. 422), and at the same time handed to the Editor of this journal, Mr. Taylor, several negatives of landscapes, views, etc., which had been prepared according to the new process.

"King gave, on Nov. 13th, 1873 (*British Journal of Photography*, 1873, vol. xx.; p. 542), a more detailed description of the gelatine emulsion process, and introduced the washing out of the soluble salts from the gelatine emulsion. In the same number of this journal (p. 544) Johnson recommended that the soluble bromide should be used in excess. This point was later recognised as highly important, and has been adhered to, as a rule, in the preparation of gelatine emulsion.

"The first gelatine emulsion was placed on the market by Burgess, in July, 1873. It was announced in the *British Journal of Photography* of the 25th July, 1873. The formula for his emulsion has never been made known. To him belongs, however, the honour of being the first who actually prepared gelatine emulsion in a satisfactory quality.

"Kennet first introduced, in 1874, the washed emulsion in the form of dry leaves (pellicles), and placed it also on the market. He described his process in the *British Journal of Photography* of April 23rd, 1874.

"Wratten and Wainwright described first in 1877, in the 'Year Book of Photography' (p. 108) for 1878, the pressing of the emulsion through a wide-meshed canvas into water, because the little lumps formed could be easily washed.

"Bennett made a great advance in the preparation of very sensitive gelatine emulsions, when he communicated on the 29th March, 1878, the important observation that an emulsion gained considerably in sensitiveness by a continued digestion at 32 degs. C."—Yours truly,

E. J. WALL.

London.

\* \* \* \*

#### THE FORTHCOMING VIENNA EXHIBITION.

SIR,—Some time ago your journal communicated an invitation from the Club of Amateur Photographers in Vienna to take part in the International Photographic Exhibition Salon in Vienna in the spring of 1891, giving a few particulars about it. You subsequently reminded your readers of it, stating that many of the best amateur workers in this country are preparing for the exhibition, and lately you gave a list of the gentlemen appointed to act as jurors. Getting interested in the matter, I procured the rules under which it is to be held, and they were a source of great astonishment to me. Hearing that a club of amateur photographers was arranging the exhibition, seeing that your journal, the journal of amateur photographers *par excellence*, was supporting the exhibition, and upon the communication that many of our best amateur photographers were preparing for it, I presumed that it would be held upon the principles which are already adopted by all exhibitions promoted by our amateur photographic societies. On the contrary. There is some kind of a preliminary jury, and only photographs that are passed by this jury will be exhibited. But this is nearly the only restriction. It is never asked if the exhibitor is at the same time the producer of the picture. There may be amongst amateur photographers a difference of opinion as to how much of the work shall be his own, but I think they are all unanimous in thinking that uncapping the lens does not constitute amateur photography. Now we do not find the slightest remark upon such trifles in the rules. They are remarkably short. With the exception of reproductions and professional portraits and landscapes, all artistic work is admitted.

I looked up closer information, and heard that the same system prevailed at the first exhibition of the same club in 1888. A distinguished amateur photographer, Mr. Stieglitz, of New York, well known in this country, has just published a note in the *Photographische Rundschau* upon the "Medaillen Regen" which showered down at the two last photographic exhibitions at Frankfurt and Budapest. But this was only the continuation of the system of the late Vienna Exhibition. It is true that our English photographers made a good show on that occasion, and got nearly all, or even all, their medals. But, with the exception of the two or three first medals, many of our best amateur workers, who exhibited there, would have been ashamed if they had seen the work placed in the same rank as theirs.

Now, it is true, on the present occasion, the contrary will take place as far as regards medals: exhibition is already taken as a distinction, and the number of medals is limited. But the other half of the system prevails. The best amateur workers may be placed side by side, in the distinction, with a lady who uncapped the lens perhaps, and allowed the whole work to be done, not by a single person, but by some of the best specialists in the departments of the special work to be done. The list of the jurors which you published lately does not tend to ameliorate this state of things. It is composed of six members, none of whom, with the exception of one, are photographic artists, but all are painters and sculptors.

And last, not least, there was the exclusion of professional portraits and landscapes, contained in the rules. I do not think it essential that professional work shall be excluded if it is the exclusive work of the exhibitor. But the latest information I have received is the following: the Amateur Club of Vienna now gives the rules another explanation, saying that the exclusion of professional work was intended to mean "not artistic" (merci, messieurs les professionnels, you will no doubt go to Vienna and give thanks for the compliment), and the artistic (*sic*) work of the professionals is admitted. Now we have no indication whether this so-called "artistic professional work" (a new thing for Mr. Wall's "Dictionary") will be exhibited in a separate class or mixed.

Your journal, Mr. Editor, has always endeavoured to raise the value of true amateur work, and so have our best amateur workers. I am told that there are not enough amateur photographers in Austria to fill a photographic exhibition, that there are a few good workers, but some of them, and just those of high aspiration for distinction and in a most influential position, do not produce their exhibits themselves. If this be the case, the standpoint held by English amateur photographers may be disagreeable to them. But I cannot see why the Vienna Club of Amateur Photographers cannot fairly hold an exhibition themselves, with the help of English amateur photographers.

Such a competition as planned by the Club of Amateur Photographers of Vienna is not a fair competition according to our standpoint. Now we have raised the position of amateur photography in this country, I hope we shall try to maintain it.—I am, etc.,

AN AMATEUR PHOTOGRAPHER.

\* \* \* \*

#### THE LIVERPOOL EXHIBITION.

SIR,—Photographers are now, probably, selecting their pictures for the forthcoming exhibition at Liverpool, from which we expect so much in the way of reform. One of the much approved new rules is to the effect that no picture of any description shall be entered or allowed to compete which has been previously exhibited in the United Kingdom. The champion class is excepted, but that could scarcely count or be depended on in the instance I am going to cite.

Mr. T. S. Mayne is the Hon. Secretary, who is most responsible for the exhibition, and great praise is due to him for his valuable and energetic efforts to produce a model photographic exhibition, and I am sure many photographers would be obliged if he would explain an apparent discrepancy in his "letter on the Edinburgh Exhibition" in your last. In speaking of a picture he greatly admires, he says, "I hope the artist will send it to Liverpool in March, 1891." What are we to understand by this? If the rule I have quoted is to be relaxed let it be made known, for I am sure there are other exhibitors at Edinburgh and other places who would like to send their pictures to Liverpool, and there is a proverb about the goose and the gander.—I am, etc.,

A POSSIBLE EXHIBITOR.



## ALBUMS FOR ARISTOTYPE PRINTS.

SIR,—As a large worker on Aristotype, I feel greatly the want of an album for suitably mounting such prints. The usual scrap-book form is unsuitable, because pasting in roughens the surface, no matter how you back the prints, and gumming by the edges is unfinished. What is wanted badly is an album in the usual form, with leaves less thick and clumsy, and of good paper, with holes cut for the usual sizes, quarter-plate, half-plate, three-quarter-plate—I do not mean mixed, but a separate album for each size. The albums usually sold are for portraits, carte, and cabinet size, and are unsuitable for the landscape photographer's purpose.

Traders do not make these things unless they are called for. I hope my call will be seconded, and responded to by some of our enterprising photographic stationers.—Yours, etc.,  
Dublin, December 29th, 1890. LOUIS MELDON.

## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

BY H. P. ROBINSON.

## CHAPTER I.—INTRODUCTORY.

A THOUGHTFUL writer noticing a recent exhibition says, "It is easy to see that the first thing, in selecting a scene, the exhibitors have had in mind was to get balance;" and he complains of the monotony, although he had previously well said that "A photographer seeking to produce artistic pictures by aid of his camera must first of all have some artistic training, and be able to recognise the laws that govern the representation of nature in a manner pleasing to man's faculties." This evidence that photographers are not only recognising but also putting into practice the rules of art, although they are not yet able to observe that one of the most subtle and important rules which ordains that the art must hide the art, is most encouraging. It shows that they are studying composition, for balance is the basis on which all artistic composition rests; and gives hope that they will continue their studies until that time arrives when, knowing the laws of art more completely, they may be able to break them with impunity and even with advantage, for it is no paradox to say that the laws of art are made to be broken, but, as the writer I have quoted wisely says, only by men who have genius; and I agree with him that "everyone is ready to acknowledge that although laws may not be broken with impunity, yet it must not be forgotten that the world will also hail as a hero the man that defies them *with success*." It is all the difference between unsuccessful insurrection and successful revolution. It is this success that is so difficult to attain, and we have in the pictorial arts woful examples of those who, daring to defy the laws, have failed.

It is with the hope of teaching photographers to produce their works, if they so wish, decently and in order, or, if they have sufficient genius, to show them what to avoid if they would be eccentric, or what course to follow if they are wise, that I have consented to edit and annotate Burnet's two essays, the one on "Composition," and the other on "Light and Shade," the best and most lucid works on the twin subjects ever written. These Essays were written exclusively for the use of painters, but the principles of art belong to all art, and photographers will find much, not to copy, but to guide them, in the selection and arrangement of their subjects.

The chief interest in photography amongst amateurs, and to a great extent also with those professionally engaged, must ever centre in its capacity as a pictorial art. If facts only are required, such as in the records of scenes we visit, or in the portraits of our friends, we all desire to make

those facts pictorial, and would certainly oftener do so if we knew how to accomplish it. This can only be done by those who not only recognise and know what is pictorial, but also understand why it is pictorial. "Burnet's Essays" may be said to concentrate this knowledge into the smallest space.

It is quite true that the greatest and grandest elements of pictorial art cannot be taught, just as no schoolmaster can turn out poets at will, yet can teach even dunces to read and write with some approach to correctness; and, on the other hand, if he had not learned to read and write, not even the heaven-born poet would be able to express himself intelligibly. To sing the song of art in proper grammatical and musical form, instead of as the babbling of an untaught infant, is the object of these essays, and they make no pretence to teach more (and I am anxious to emphasise this statement). Notwithstanding which they will be found a very solid and safe foundation on which to "build the lofty rhyme."

To the photographer, then, who desires to produce pictures, a knowledge of the rules of art is of the most emphatic importance. From the nature of his art he is less called upon to give a form to pictorial conceptions than give pictorial embodiment to existing facts, and it is often only by arrangement of materials and management of light and shade, that a pictorial character can be given to the representation of prosaic facts. To the painter who can give interest to his pictures by the beauty of his subject, by the thought represented, or by the glamour of colour, some disregard of the laws of art may occasionally be permitted without pictorial loss; to the photographer who would excel as an artist, a rigid attention to all that can be reduced to rule, or quasi-rule, becomes imperative, for the reason that it often forms his sole means of elevating his work beyond the rank of a mere diagram or plan and elevation of some very commonplace and unpictorial piece of nature's handiwork, whether animate or inanimate; above all, a knowledge of what constitutes pictorial effect will enable him to see pictorially.

I say this well knowing that there are those who object to all rules and laws in art, and, throwing the experience of ages to the winds, would have every one begin afresh; a method, by the bye, which, if generally adopted, would keep the world in continual childhood. This unintelligent craving for something new, this vain struggle to do not as others do, this desire to make laws unto themselves, is not only unprogressive but unnatural, for evolution is a law of nature, and all things good "broaden slowly down, from precedent to precedent." All new things are but the recomposition of the old elements, and end in partial imitation after all.

It has also been objected that anything in the form of rules or laws would lead to conventionality. This is an objection without a meaning, for all art is more or less conventional. It would scarcely be an exaggeration to say that the best art has been the most conventional, and that the nearest approach to mirror-like fidelity to nature has always been the worst art. A simple transcript of nature by photography is not art, but if the photographer shows that the operator used photographic materials as a means of making a picture, and succeeded, the photograph may rise to the dignity of fine art.

There is no intention in these rules to degrade the pictorial representation of nature to the level of a strict formula. It has been objected that a law to be logical must hold good in all cases; to which it may be easily answered that when art becomes logical, or one of the exact sciences, it will cease to be art.

"These rules, of old discovered, not devised,  
Are nature still, but nature methodised."



Burnet's "Essays on Art" were published at different periods—"Composition" in 1822, "Light and Shade" in 1826. Two other essays were subsequently published, but they would have little interest for photographers, and probably tend to confusion. They have long been out of print, and the price when they do occur for sale at second-hand book shops is an enormous increase on the publication price. The artist who now possesses the Essays esteems himself as the possessor of a treasure. All artists, therefore, as well as those who practise photography only, will be glad of selections from these invaluable works. I may now briefly allude to the principal characteristics of the two Essays.

In the Essay on "Composition," Burnet explains what the subject is and means, and goes on to give a lucid description of what may be called, for convenience, the rules of composition, but by which, however, it is not intended that the subject can be reduced to strict laws. These rules are illustrated by etchings by himself from the works of the most famous masters.

In "Light and Shade" our author begins by giving all the most self-evident and palpable combinations, and gradually leads the student to the consideration of more intricate subjects, illustrating every proposition by sketches; and in a subject of this kind a slight sketch is more useful than many words. As the author himself says: "Painting is a practical branch of philosophy, and can only be rendered clear by satisfying the observations of the eye as well as the reflections of the mind; this, perhaps, is the reason why so much has been written on the subject without those truths being sufficiently obvious which the writers wished to demonstrate."

Although published so many years ago, these Essays are as fresh and useful as if written yesterday. Nothing essential has been added to or taken from the fundamental principles of art since Burnet wrote, except, indeed, by impressionist and naturalistic painters, who ignore all that has gone before in art, from the Egyptians to the present time. The simplicity and clearness of the writing of the Essays adds greatly to their charm. You have only to read a paragraph, and look at the accompanying illustration, and the meaning is clear to the most ordinary mind. The author has taken the greatest care not to overload his work. Every word and illustration is to the purpose, and there is nothing superfluous.

Burnet frequently alludes to colour, and its effect on composition. These observations may be thought useless to the photographer, but I have left them in, for although the photographer's practice may be confined to the effects of form and chiaroscuro, they do not interfere, and he cannot know too much of art generally.

Finally, it has been the chief wish of my photographic life to see the art-science truly attain to the dignity of a fine art, and that must be my excuse for recommending so strongly to photographers, both professional and amateur, the best elementary guide to the subject.

(To be continued.)

## Photography with a Purpose.

By ADOLPH. W. BEER.

THE landscape photographer who takes an interest in his especial line of work, apart from its technicalities, must of necessity keep his mind, or note-book, stored with reminders of promising but as yet unvisited districts, for illustration at some convenient time; and to what pleasanter or more profitable use can we put our accomplishment than permanently recording in unimpeachable characters the

scenes that lie around us? This is eminently so if, at some trouble and risk of possible disappointment, we search out for what is not already well trodden ground. The artist has small chance of fame if he persistently copies the work of others, or selects his subjects from localities already made notorious as picturesque pot-boilers; but, on the other hand, have we not numberless examples where kudos and more solid advantages have been reaped by men whose aim has been to work out of the beaten tracks, in quiet, lovely, almost unknown corners *not* done to death by lazy copyists?

We look at this subject from the standpoint of an amateur landscape photographer pure and simple, and are not ashamed to confess that in our rambles "all is fish that comes to the (dry plate) net," *if it only makes a picture*, or is fairly illustrative of the district or any local peculiarity, for what can be more annoying in preparing a topographical sketch than to find you have omitted a view which would be of the greatest value in filling up a gap or elucidating a description? Upon this point we are inclined to think there is a good deal of nonsense talked and written, with the object of attempting to induce landscape photographers never to make an exposure unless satisfied that all the essentials of a picture are there, and never wasting a plate if the light is not exactly right and perfect. If we had adhered to this rule, we should have been without some of the most valued negatives we possess. So have no hesitation in advising the amateur to err on the side of liberality, and when he sees his picture make the best of it for the time being; he may never again have the same opportunity, for how many times do we recall pictures "we left behind us"?

The great attraction to the topographical photographer is to make studies that will, as the years roll on, be increasingly interesting to himself and valuable to his fellow men. For many years past, some of us, in a small and quiet way, have been laying up records of the picturesque nooks and corners of our native land—especially devoting attention to what may be called, for want of a better term, picturesque antiquities, of all and sundry kinds—but though the field is large, the labourers are few, and many of the most charming subjects are one by one lost to the world of art often unnoticed and unmarked. Can it be wondered then that a feeling of personal loss is oft experienced, as we read of an old church and its contents being destroyed by fire or the hand of the "restorer," or a grand and unique manor house fallen into ruins or pulled down, tempered, it may be, by the knowledge we have good negatives of them in our plate-boxes, possibly intensified by the thought we have missed taking advantage of a moment that will never return.

It is to some temperaments the acme of pleasure to get as far away from home as possible when on holiday thoughts intent, and certainly for fresh sights and novel sensations, foreign pictures at one time had an undoubted charm; but now-a-days, when nearly everybody crosses the "silver streak" as a matter of course, much of the novelty has worn away, and our minds are free to think of the fertile fields at home, where, scattered with a lavish hand throughout our English counties, are countless subjects worthy of reproduction by our faithful cameras.

To one who has for so many years made this class of work a special study occasionally comes the overwhelming conviction that never in one lifetime can the task be adequately accomplished, but let us each do our best to render the work as complete as possible.

So, to our fellow amateurs who desire an object and an aim in their hobby, we strongly urge the above points, inviting them to make photographic records, as thoroughly as may be, of any section of the country they may chance to be located in, temporarily or permanently, not resting content to just "potter about" as so many amateurs do, but per-



severingly exploring highways and byeways, old roads and disused lanes, field paths and bridle roads, securing studies, often so delightfully picturesque, of old manor houses now in the occupation of farmers, village scenes quaint and rare, church porches and curious epitaphs, mediæval tombs and Norman arches, or those scant relics of antiquity that require knowledge and diligent search to discover. Read up the bygone records of the selected locality, before or while working, and a rich reward will be ensured in pleasant memories, increased information, and possibly valuable additions to the stock of general knowledge, while at the same time a feeling of satisfaction will be engendered in the mind, knowing that *your* hobby-horse is not of the wooden, purposeless nature some are apt to degenerate into.



## Photographic Work for the Winter Months.

BY T. PERKINS, M.A.

### CHAPTER 1.

#### OUT-DOOR WORK.—ARTISTIC.

OUR summer's holiday is a thing of the past; no longer can we wander with our well-loved and constant companions, camera and lenses, through the leafy lanes of Devon or the pleasant valleys of Wales, or take snap-shots at groups of pleasure-seekers on the sands at fashionable sea-side towns, or at the beautiful start or exciting finish of some yacht race. The winter fogs, yellow with smoke, often render photographic work almost an impossibility in our large towns, and even in the country though they are of a more actinic colour, yet they often enwrap every object in an impenetrable haze. Many, no doubt, are the lenses that, like hibernating animals, have retired for a winter's repose to their wash-leather bags or velvet-lined cases; many too the cameras that, having been well dusted, have been laid carefully by until such time as

"With tears and smiles from heaven again  
The maiden spring upon the plain,  
Comes in a sun-lit fall of rain.  
In crystal vapour everywhere,  
Blue isles of heaven laugh between,  
And topmost elm-trees gather green  
From draughts of balmy air."

But to be severed for so long a period from that which is dear to us is a great trial, and we ourselves being enthusiastic photographers, cannot bring ourselves to endure such a separation from apparatus and chemicals. Nor indeed is it necessary. Much work can be done in the winter months, and some of it much better than in the summer—some of it can only be done in the winter.

A few classes of such work it is our object now to point out for the benefit of our fellow amateur photographers, most of whom no doubt are readers of the periodical which from its very name appeals especially to them.

The winter months will provide both the artistic and scientific photographer with outdoor work, as well as occupation for dull days and even for long evenings at home.

That which will occur probably to most will be the possibility of securing snow scenes, but in our opinion such pictures are rarely successful and seldom pleasing. It might be supposed that photography was especially suited to the representation of nature arranged in her white garb, when the unobservant eye might suppose that white and dark brown were the only colours present in the landscape, but at no time does nature so much require the aid of colour to represent her beauties as when snow lies on the ground.

The snow wreaths and drifts obliterate the outlines of objects so that in many cases beauty of form is lost, and all depends on beauty of colour, and colour too of the most subtle kind—the delicate rose flush on the edge of the snow cloud sombre in its massive folds, the sparkle of the sunlight on the edges of the newly-fallen snow, the delicate blue shadows in the hollows and furrows. Occasionally beautiful snow pictures may be produced under exceptional circumstances by means of photography; one example of which may be found in the first number of *Sun Artists*—Mr. Gale's "Foggy Day on the Thames"—although we should have preferred to see the subject rendered in grey rather than in brown. Another subject which we have never seen attempted would make, could it be well rendered, a charming picture—a group of sheep huddled together for shelter under a lofty bank, while the snow is falling from a leaden sky and whirled away over their backs. Such a picture would require the use of a large aperture, for the light would probably be poor; but any loss of sharpness would be well compensated for by the artistic nature of the subject; nay, in such a subject we are far from thinking that a judicious application of the principles of the naturalistic school would be out of place, and printed in the cool greys of platinotype such a picture would be singularly beautiful. Of course, such a scene is not to be found everywhere, or every day, and it cannot be previously arranged, depending as it does on a combination of many circumstances of time and place and atmospheric conditions. But, as we have said, snow scenes are not easy to render; painters seem to avoid them, knowing, no doubt, the difficulty of painting the snow in its right colours, and the difficulty of managing such large masses of white in their pictures.

The effect of hoar frost is often very beautifully expressed by prints in platinum—views, we mean, in which trees are represented with their thick coats of rime on every branch and twig. Chances of getting such effects may come any winter, but when they are offered no time must be lost, for the effects are generally short-lived. The conditions for the production of these effects are (1st) an entire absence of wind, (2nd) a temperature not far removed from freezing point, (3rd) an atmosphere heavily laden with moisture in the form of fog which freezes on the branches of the trees, which are already of a lower temperature than 32° Fahrenheit, forming on the side exposed to the drift of fog, a coating which gradually increases till, perhaps, it is half an inch or more in thickness. Then if it should chance that the mist lifts a bit, the sky remaining grey, the right time for taking the photograph is presented to us, and we must seize the opportunity at once, for the slightest breath of wind will shake the rime from the trees; the warmth of the sun, if it shines, will also detach it from the branches, and, moreover, direct sunlight will spoil the effect in a picture. It would be well for those who are thinking of attempting hoar-frost photographs to select a promising spot beforehand, some group of tall elms, for instance, in a field or grassy lane, on the blades and bents in which hoar frost will also settle, the trees themselves, with perhaps the addition of a field gate or cottage, composing well. The picture should be well arranged beforehand; it is usually too late to begin to look for the subject when the hoar frost has already formed.

Again, another subject for artistic photographs in the winter months, will be found in the mighty boles of forest trees. The beauty of tree trunks is generally overlooked, but great the beauty is of the gnarled and knotty trunk and crooked lower limbs of some old oak, the gigantic bole of a beech, especially if it has been pollarded long ago, like those of the far-famed Burnham Beeches, with its smooth bark and vertical folds, its massive bosses, its far-spreading roots, and its patches of lichen, bright yellow or tender grey.



And many of these characteristics are best secured in a photograph taken when the branches are bare of leaves, for in the summer the thick foliage casts too heavy a shade upon the trunk, or if the sun pierces here and there, patches of light, which may not lend themselves to pictorial effect, fall on trunk or ground. The carpet, too, of fallen leaves, the leafless briar, the withered bracken, all come in as useful accessories. A forest glade in winter, too, will make an artistic picture; the graceful birch, with its silvery bark gashed here and there with brown cracks, and its light ramification and slender twigs, is especially beautiful in winter. And possibly, here and there, an evergreen tree, a pine or cedar, may be found, its foliated boughs contrasting well with the bare branches around it. For such scenes as these, still, sunny days should be chosen, and there are many of these at times in winter, when the ground is hard with frost but no snow has fallen, and a thin mist hanging amid the trees gives the effect of distance to the background. Then, again, what lovely and artistic effects may be obtained on winter days of sheets of water over which other sheets of mist are hanging.

In towns, winter is oftentimes unlovely, with its snow trodden by feet of men and horses into grimy slush, and its sunlight murky struggling through smoke; but those who live in the country know how beautiful it often is there, and we are sure that the photographer who sallies forth when the swallows come, and puts his camera by when they leave our shores, misses many an opportunity of doing good artistic work. He, too, who goes to the seaside will find subjects there not so easily secured in summer. It is true that the terraces of lodging houses will look dull and dreary, that there will be an air of sleepiness about the streets, that the sands will be deserted, the dancers' feet will no longer fall with rhythmic cadence on the polished boards, nor "music clash from the lit pavilion" at the end of the pier; but the artist who loves his art does not find his chief or only joy in the usual amusements got up for the benefit of the summer visitor—nay, when these are gone, gone also is much of the vulgarity which mars so many of our lovely seaside places, out-of-the-way nooks which in our youth we remember "yet untroubled by the tourist, touched on by no travel book." True we cannot get rid of the monster hotels doing their best, with their hideous architecture, to destroy the beauty of the place, yet at any rate we can find the shore, the cliffs, the caves, the sea-girt rocks in their native beauty, and photograph them without the presence of the fashionable costumes of the day, which it is almost impossible to get rid of during "the season." We are not misanthropes, and can gaze with pleasure on the happy faces of holiday makers enjoying the pure seaside breezes, especially if we know that they were yesterday, and will be to-morrow, hard at work under the smoky skies of some manufacturing town, or toiling amid the fret and din of London life; but yet we must confess that as photographers in search of the artistic we could well dispense with their presence and find more pleasure and better pictures on a lonelier shore. In winter even; by the seaside, we need not at mid-day, if the sun should shine out through rifts of clouds, despair of getting so-called instantaneous effects of stormy waves and sky, and we may always remember that though for some subjects direct sunlight on the principal object may be necessary, yet there is a beauty in grey days and quiet scenery; that figures are not always necessary, and if they are not present the longer exposure which the weaker light of winter requires may be given. What has been said will just indicate some of the lines on which the artistic photographer may work. In the next chapter we intend to treat on outdoor work of a scientific character.

## Photographic Tonality.

By T. L. BUCK.

I HAVE no doubt that a great many people, more especially amateur photographers, often wonder why it is that the, to them, beautiful productions of photography should be held in such light esteem, in many cases amounting almost to contempt, by artists generally (mark, *artists*; we do not recognise as such all who "profess" to paint, etc.; there are many painters, few artists). I have no hesitation in saying that the wretched tonality of the majority of photographic productions is the chief cause of this; and who that has any knowledge of tonal values can wonder?

I freely admit that we labour under a great disadvantage, so far as regards the ordinary dry plate which is not corrected for colour, seeing that it is so much more sensitive to the blue than the red end of the spectrum; but when we know the weakness of our tools we should accept the knowledge, and, making our deductions, try to overcome such weakness, which I maintain can be done to a very satisfactory extent.

The ordinary form of dry plate, as we all know, is far more sensitive to the cool blues and greys than to the warm reds, browns, etc. This is an inherent weakness of the emulsion; but why, I ask, intensify such weakness? which is almost universally done, and no wonder, seeing that we are taught to do it, I may say, by nearly every one of those who write books, etc., for our instruction.

Now in regard to development. Are we not told to "develop slowly"? "Keep down the accelerator" seems to be the burthen of the song. This doctrine, I maintain, is altogether wrong—and capable of what? Of begetting as wretched tonality as anyone could wish for. And why? For this reason: it allows those parts of the plate most acted upon during exposure—*i.e.*, the places acted upon by the blues and greys—to gather a density out of all proportion to their tonal value, and keeps the very parts of the plate least acted upon—*i.e.*, by the reds, yellows, etc.—from having the energetic accelerating they need so that they may assume their proper gradations and tonal value; in fact, it just intensifies the very weakness we have to fight against.

I say, cut exposures short (for reasons given hereafter), and use a developer strong in accelerator and weak in oxidising and restraining agents. Press development upon those parts that need it, before those parts most acted upon have time to gather an opacity out of all reason. No fear need be had that more density will be got upon those parts least acted upon by light than is their proper portion, the high lights will always take care of themselves.

The reason why I say, cut exposure short, is this: if exposures are *not* short, an energetic developer would cause flatness, fog, and hopeless failure.

Nature is never chalk and soot; black and white are to a great extent unknown quantities.

If we want to raise our fascinating art to the rank of a real art, we must look to tonality as our greatest weakness, and once thoroughly overcome this, I maintain that photography as a monochrome process will stand pre-eminent and unrivalled.



**Dinner to Mr. J. A. Sinclair.**—On the 22nd of December a number of friends entertained Mr. J. A. Sinclair to dinner at Galt's, in Church Street, Liverpool, on the occasion of his departure for London. Mr. Sinclair has become widely known in Liverpool, in connection with the Artists' Club, of which he was Secretary, and the Amateur Photographic Association, in which he served on the Committee, besides being a noted prize-winner at competitions. Mr. W. Tomkinson, as being a member of both clubs, was voted to the chair, and under his auspices a most agreeable social evening was spent.



## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 433.)

A NUMBER of salts exist which, whilst belonging to one or other of the four classes already described, differ from the salts previously mentioned in that, with only one acid, they contain at least two metals. They are called *double salts*, and are formed by the direct combination of two salts, as in the case of ordinary alum, which is potassium aluminium sulphate,  $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$ , or, if the acid is not monobasic, by the replacement of different atoms of basic hydrogen by different metals, as in the case of the so called microcosmic salt, which is ammonium sodium hydrogen phosphate,  $(NH_4 \cdot Na \cdot HPO_4)$ , and is formed from phosphoric acid ( $H_3PO_4$ ) by the replacement of one atom of hydrogen by the group ammonium ( $NH_4$ ), and of another by sodium, whilst the third atom of hydrogen is left.

Double salts are usually formed by mixing solutions of the constituent salts, and, if necessary, evaporating the liquid to the crystallising point. Sometimes the properties of double salts are a combination or a mean of the properties of their constituents, but not unfrequently this does not hold good. In many cases a double salt is readily soluble in water, whereas one of its constituents may be insoluble. Several double salts play an important part in photographic operations.

EXPERIMENT 84.—To a small quantity of mercuric chloride solution, add a few drops of potassium iodide solution; a scarlet precipitate of mercuric iodide ( $HgI_2$ ) will form. (Compare Expt. 15.) Now continue to add potassium iodide and agitate the liquid; the scarlet precipitate will redissolve and a colourless solution will be formed. Mercuric iodide combines with potassium iodide to form the colourless double salt, mercuric potassium iodide ( $HgI_2 \cdot 2KI$ ), which readily dissolves in water.

EXPERIMENT 85.—To a solution of silver nitrate add a small quantity of potassium cyanide\* solution; a white precipitate of silver cyanide ( $AgCN$ ) is formed. Continue the addition of the potassium cyanide, and silver potassium cyanide ( $AgCN \cdot KCN$ ) is formed and readily dissolves in the water.

EXPERIMENT 86.—To a solution of ferrous sulphate add a few drops of potassium oxalate solution; a yellow precipitate of ferrous oxalate ( $FeC_2O_4$ ) separates. Continue the addition of the potassium salt with vigorous agitation, and the precipitate disappears, and a deep orange solution of the double salt, ferrous potassium oxalate,  $FeC_2O_4 \cdot K_2C_2O_4$ , is formed. This solution constitutes the ordinary ferrous oxalate developer.

EXPERIMENT 87.—To a solution of silver nitrate add one or two drops of a solution of sodium thiosulphate ("hypo") ( $Na_2S_2O_3$ ); a white precipitate of silver thiosulphate ( $Ag_2S_2O_3$ ) will form, but will rapidly become black owing to its decomposition into silver sulphide ( $Ag_2S$ ). To another portion of the silver solution add "hypo" solution gradually, but somewhat rapidly, with vigorous agitation; you will observe that the white precipitate redissolves, and a colourless solution is formed. The silver thiosulphate combines with the excess of sodium thiosulphate to form the double salt silver sodium thiosulphate ( $Ag_2S_2O_3 \cdot 2Na_2S_2O_3$ ), which is readily soluble in water, and is much less liable to change than the simple silver thiosulphate. The formation of this salt takes place in the operation of fixing silver images.

It has already been stated that the crystals obtained from a solution of sodium sulphate (Expt. 78) consist of the salt combined with a certain quantity of water, and the

formula of alum given above shows the presence, in the crystals, of a large proportion of water. Salts can, in fact, be divided into two groups, *anhydrous* salts, which contain no water in combination, and *hydrated* salts, which, in the solid state, consist of the salt combined with a certain number of molecules of water.

EXPERIMENT 88.—Powder, separately, some of the potassium nitrate obtained in Expt. 74 or 77, some silver nitrate, some potassium bromide, and some sodium chloride (common salt). Dry the powders by pressing them between blotting paper or filter paper, and heat a portion of each powder in separate test tubes, which must be quite clean, and dry. Observe that no water condenses on the cold parts of the tubes. These salts are *anhydrous*; they contain no water in combination.

EXPERIMENT 89.—Make similar experiments with soda crystals (washing soda), zinc sulphate (obtained in Expts. 65 and 75), magnesium sulphate (obtained in Expt. 67), and sodium thiosulphate ("hypo"). Observe that every one of these salts gives off a considerable quantity of water; they are *hydrated* salts, and contain water in combination.

EXPERIMENT 90.—Place small quantities of crystallised zinc sulphate, magnesium sulphate, copper sulphate (obtained in Expt. 76), and soda crystals, in crucibles or on watch glasses, and heat them for some time at a moderate temperature, say, on the top of an oven. If you weigh the crucibles or watch glasses, and their contents before heating, and weigh them again after they have been heated for some time and have been allowed to cool, you will find that they have lost considerably in weight, because the greater part of their water has been expelled. Examine the residues, and you will see that the crystals have become opaque, and have crumbled to a powder, and that the copper sulphate in addition has become almost white.

Since the expulsion of the combined water from a salt causes the destruction of its crystalline form, such water is called *water of crystallisation*.

Sometimes all the combined water in a salt is water of crystallisation; sometimes part of the water is more intimately combined with the salt and is more difficult to expel. Analyses show that the sulphates previously mentioned have the composition indicated by the following formulæ:—

Copper sulphate,  $CuSO_4 \cdot 5H_2O$ .

Ferrous sulphate,  $FeSO_4 \cdot 7H_2O$ .

Magnesium sulphate,  $MgSO_4 \cdot 7H_2O$ .

Zinc sulphate,  $ZnSO_4 \cdot 7H_2O$ .

Now it is found that if these salts are heated for a sufficient time at  $100^\circ C$ ., four out of the five molecules of water in the copper sulphate crystals are expelled; the residue is almost colourless, but still contains one molecule of water and has the composition  $CuSO_4 \cdot H_2O$ . In the case of the ferrous, magnesium, and zinc sulphates, six out of the seven molecules of water are expelled at  $100^\circ C$ ., and the residues have the composition  $FeSO_4 \cdot H_2O$ ,  $MgSO_4 \cdot H_2O$ , and  $ZnSO_4 \cdot H_2O$  respectively. In all cases the salts have lost their crystalline form, and hence in the case of the copper salt the four molecules of water, and in the case of the other salts the six molecules of water, are the true water of crystallisation. The remaining molecule of water is more intimately combined with the salt, and can only be expelled at a much higher temperature, about  $200^\circ C$ .; it is called *water of constitution*.

It is quite clear that when we are calculating the quantity of a given salt required to produce a given change we must, if it is a hydrated salt, take into account the quantity of combined water which it contains. For example, the quantity of anhydrous sodium carbonate ( $Na_2CO_3$ ) required to precipitate 340 parts of silver nitrate in accordance with

\* N.B.—Potassium cyanide is extremely poisonous.



the equation  $2\text{AgNO}_3 + \text{Na}_2\text{CO}_3 = \text{Ag}_2\text{CO}_3 + 2\text{NaNO}_3$ , would be  $46 + 12 + 48 = 106$  parts, but if the hydrated sodium carbonate  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$  (soda crystals) were used, we should require  $46 + 12 + 48 + 180 = 286$  parts, a very considerable difference.

Many solid acids resemble salts in containing combined water; for example, oxalic acid ( $\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$ ) and citric acid ( $\text{H}_3\text{C}_6\text{H}_5\text{O}_7 \cdot \text{H}_2\text{O}$ ); and this must likewise be taken into account in calculating quantities of these acids.

(To be continued.)

## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER X.

THE SENSITIVE PLATE UPON WHICH THE IMAGE IS TO BE IMPRESSED BY LIGHT.

*Material Used as a Support. (Continued.)*

**Black Leather** was not unfrequently used during the collodion era (1851-1880), as a support for the positive pictures, or ambrotypes, on collodion. These required some black material (black varnish was commonly employed) as a backing, to give contrast to the high lights.

(4) **Glass.**—Sir John Herschel was one of the first to draw attention to the three great advantages possessed by glass as a support, viz., rigidity, transparency, and impermeability. There is a precious relic in the South Kensington Museum, a photograph of the famous "forty foot" telescope erected at Slough by the elder Herschel, and photographed on a glass plate by his son, Sir John Herschel, in 1839.

But the first process in which glass came into general use was the "albumen process" of Niepce de St. Victor, published in 1847. In Scott-Archer's collodion process, too, glass was almost universally employed.

The *rigidity* of glass is a valuable property. It is much easier to handle a firm, rigid glass plate than a limp piece of paper or "film." Glass does not need anything to support it in the printing-frame, and it is more transparent (and therefore allows printing to be performed through it more rapidly) than any other substance.

By its *impermeability*, glass keeps on the surface the sensitive coating applied to it. It is also practically *unacted upon* by nearly all chemicals; and this is another necessary quality in any material employed as a support.

The principal disadvantages of glass are its brittleness and its weight. These disadvantages are, however, more felt in large-sized plates than in small ones; most makers now select *thin* glass for the quarter-plates ( $4\frac{1}{4}$  by  $3\frac{1}{4}$  inches) almost universally employed in hand-cameras; and these small plates will stand a good deal of careless usage without breaking; although, to be sure, when a plate *does* come to grief, it is certain to be "the best negative of the lot." We must confess to a great liking for glass as a "support."

**Mica.**—Mica is a mineral which is capable of being split into light, thin, flexible, and transparent plates. Since it can be cut readily with a pair of scissors, it has been coated and used occasionally for photographs which it was desired to fit into oval lockets, etc. Plates of mica of any size would be difficult to obtain and expensive; at least of the fine quality which would be needed for photographic purposes. But for the small sizes used in hand-cameras, it seems to us that mica might be afforded a further trial. Its great advantage is that it combines rigidity with lightness, and sufficient flexibility to prevent breakage by a fall.

**Celluloid.**—The inventor of celluloid was a Birmingham chemist named Parkes, who patented his discovery in the

year 1856. He obtained it by dissolving a form of gun-cotton in certain solvents, with the result of producing a compact, horny, buff-coloured substance, which has been largely used in the manufacture of combs, piano-keys, knife-handles, etc. The manufacture of celluloid has been carried on mainly in the United States and in Paris.

In the year 1888, the American manufacturers succeeded in obtaining a *transparent* form of celluloid, mainly, it is believed, by the use of camphor, and of a solvent known as amyl acetate (familiarily designated "pear-drop essence") whose odour is strongly perceptible in the thin rolls of celluloid manufactured by the Eastman Company.

The well-known American plate-maker, Mr. John Carbutt, coated films of this new (transparent) form of celluloid, and put them on the market in the latter part of the year 1888. Messrs. Anthony, of 591, Broadway, New York, had experimented with celluloid even before Carbutt, and the coated sheets of this material which they sell under the name of the "Climax Film" are of most excellent quality. These "cut sheets" of celluloid are about the one-hundredth part of an inch in thickness; and they are only one-fourteenth the weight of glass plates of the same size.

During the next year (1889) the Eastman Company succeeded in manufacturing transparent celluloid in sheets, only the three hundred and fiftieth part of an inch in thickness. This film is "rollable," and is used in the Eastman roll-holder, being wound off one spool or roller on to another. A large factory has just been built at Harrow, near London, to manufacture this material specially for the European market. The "rollable" celluloid film is only about one-fortieth the weight of glass possessing the same amount of surface.

Another advantage of celluloid is that the spreading or reflection of light called "halation" is much less than with glass. One side of the celluloid film is usually made "matt," like the surface of ground-glass, and it has long been known that this "matt-surface" was effective in diminishing halation. Celluloid has been well described as "flexible glass." Its great advantages are its lightness, its flexibility, and the power of manufacturing it in such lengths that twenty or thirty consecutive exposures can be made upon one band of celluloid. By joining the ends of two or more bands together (and this is usually done) we can get a "roll" sufficient for one hundred exposures. The only objection to this is that there is necessarily a flaw at the junction of the bands, and that this flaw will be pretty certain to spoil one picture of the set taken.

In the process of developing, the celluloid films have a tendency to rise or bulge up above the solution in the developing-dish. This must be prevented by the use of a good depth of the liquid, and by occasionally passing a camel-hair brush over the films.

Still another point to be considered in connection with celluloid as a support, is the *price*. At present celluloid films cost nearly twice as much as glass plates.

[*Memorandum.*—I read with interest Mr. Burgess's letter in last week's AMATEUR PHOTOGRAPHER, in which he claims to be the discoverer of the gelatino-bromide process. In my "History of Photography,"\* I have, as I believe, given Mr. Burgess due credit for his share in drawing attention to the claims of gelatine. But he must remember that in the scientific world it is a strict rule that the credit of any discovery belongs to him who first publishes it for the benefit of his fellow men. Now, according to Mr. Burgess's own showing, it appears that he preserved the matter as a trade secret.

But I must altogether deny that Dr. Maddox is to be ousted, even on that ground. His formula was *not* unworkable. I have prints made from negatives taken by Dr. Maddox in 1871 (and I believe Mr. Traill Taylor has both prints and negatives), which

\* Published by Percy Lund and Co.



prove that Dr. Maddox's gelatine process, even at that date, only wanted the care of an expert in photography (a position to which Dr. Maddox never laid claim, his aim being scientific only) to produce excellent results. The whole question, moreover, was discussed by the jury at the great "Inventions" Exhibition of 1885; and the award of the gold medal to Dr. Maddox for his discovery of the gelatino-bromide process shows what was thought of his work by such men as Capt. Abney, etc. As Mr. Burgess did not then urge his claims, I think he is not well advised in bringing them forward now.—W. J. H.]

(To be continued.)

## Photo-Micrography.—I.

BY ANDREW PRINGLE.

### INTRODUCTORY—APARTMENTS—GENERAL ARRANGEMENTS.

THE use of photography for recording purposes is becoming daily more common, as its excellencies are being daily discovered and admitted, and one of the most important branches of record is the record of the microscopical image which we can obtain by photography in a manner far more true, more convincing, more speedy, and more simple than by any other graphic process.

In photo-micrography we have a series of microscopical operations, another of photographic operations; by skill alone in both branches shall we produce thoroughly good photo-micrographs. To produce mediocre micrographs requires only a middling microscopist and a fair photographer; to produce the best results we must have the best instruments, and the greatest skill in microscopy and in photography.

It is not my intention to descant here on the pleasures or uses of the science which forms my subject; my duty is to point out, as clearly yet as succinctly as may be, *some* methods by which photo-micrographs can be produced as well as I can produce them myself; but I would never undertake to describe *all* the methods available, and still less would I venture to assert that my way is the only way.

Perhaps the chief difficulty facing the writer on photo-micrography for amateur readers lies in the fact that different readers have different aims. One wishes to take up the science and carry it to its highest point of difficulty and excellence; another, perhaps, proposes to confine his attention to simple apparatus, easy objects, low magnifications, relaxation rather than labour, amusement rather than study. I may make a mistake, but I propose to point rather to results of the highest character from objects of considerable difficulty, than to ordinary and easy results from simple "stock" preparations. As my own apparatus is by no means excessively costly, and as my general appliances are little beyond those possessed by any amateur photographer who does a fair amount of ordinary work, my suggested methods, though pointing to difficult work, may—and I hope they will—be found sufficiently simple and inexpensive for those who do not quite "aim the moon."

I take for granted that my reader has some kind of apartment and arrangements for ordinary photography. No great size of either is necessary, as we shall deal but sparsely with any larger size than quarter-plates. The beginner almost always runs off to large images on large plates, but if he possess only a half-plate camera, he will save himself much loss of time and trouble.

The most important point in general arrangements is to secure for the microscopical and exposure parts of the work

a perfectly steady apartment. Unless exposures are to be quite short, unless our magnifications are to be low, or our illumination very bright, as direct sunlight, our room must be solid, the floor well laid, and the operating table strong and standing firmly on the floor. Failing either or both of these, the next best plan is to have everything, except the several parts of the actual apparatus, moveable and free. The table or the base bearing the apparatus may be mounted on cubes of caoutchouc; very good work in high powers has been done on an apparatus slung from the ceiling, the point being that if any part moves, the whole of the apparatus moves together. A cellar is probably the best place, so far as steadiness goes, but dampness, if present, will injure the apparatus. Vibration is to be avoided; but if there must be vibration it should be synchronous as regards the component parts of the illuminating, optical, and photographic systems.

This "dark" or operating room used for ordinary photography will answer for our special branch, but a ruby light must be provided as we shall have to use colour-correct plates for many of our objects. If we have to deal with the most difficult stains we must provide a dark-green glass in addition to our ruby. Our dark-room illumination must comprise some kind of standard actinic light, *i.e.*, some source of light which burns, or can be made to burn, with a fixed visual brilliance, for it is necessary to judge very accurately at a certain stage of development what points of detail and density our negative has reached, and without a standard light this is impossible, for comparison by experience is our only real guide. An oil lamp with the flame-height marked by a projecting arm, a "standard" candle, or a "regulator" gas-burner will answer this purpose. The illuminant is, of course, inside the non-actinic lantern.

The photo-micrographer aiming at high-class work should, so far as possible, have his mind free from all sorts of distractions during the times when he is arranging his object in the microscope, and when he is developing his plate. However sharp may be our eyes, it is necessary to secure complete concentration of mind for the time being at least. Therefore, two things are urgently needed: a good light and perfect order. The light must be "safe," but it should be plentiful. And there should be no confusion of bottles and dishes in the dark-room. Very few bottles are required during development, and very few dishes, and each bottle and each dish should have its own place.

A water tap and a waste sink are such great conveniences that much may with wisdom be sacrificed in order to obtain these. The dark-room and the microscope room may be one, or they may be adjacent, but for a tap and sink I would go a considerable distance from my microscope room, if necessary. The tap should by all means have a "rose" on its orifice, and I prefer an arm tap *plus* a screw-down valve. An arm tap working by a turn of the arm alone is a very bad arrangement.

A "matchless" burner for gas is a very useful adjunct to a dark-room where gas is laid on. If for nothing else, it will be found very convenient for bromide paper and gelatino-bromide slide printing.

Another very important matter is to have a standard light by which to judge the qualities of our finished negatives. This light should be furnished with an opal or ground-glass globe. A negative cannot be properly estimated by a bare light. I have repeatedly lost time by judging with a bare light negatives developed during the evening. The first, perhaps, was amiss, and the others followed, and next day I found the whole set too weak or too dense. Daylight is the proper light by which to judge, but failing daylight, an opal globe will answer.

(To be continued.)

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



## Notes for Novices.

### FOCAL LENGTH.

An important point for practical work is the estimation of the equivalent focus or focal length of a lens; this may for convenience sake be defined as the focus for parallel rays of light. The determination of this point is not only necessary for the determination of the ratio aperture of the diaphragms or stops, which we shall explain hereafter, but it is absolutely essential to know the focal length for many other purposes, which we need not here enter upon.

There are a great many methods, which have been proposed for measuring the focal length; for instance (1) by focussing the sun, and measuring the distance from the lens to the screen; (2) by testing the lens on an optical bench; (3) by comparing the image with that given by a single spectacle lens; (4) by focussing an object the same size, and measuring the distance between the screen and object, and dividing this by four; (5) Grubb's method of marking two lines on the screen, and making the image of a distant object coincide with these lines, and then tracing a line by the side of the camera and making these two lines meet, and marking off on the two lines a distance exactly equal to the distance of the marks on the screen, and finding the distance between the intersection of the lines and the base of the triangle. We dismiss the first method as impracticable, because the sun is not always to be seen to order; the second because few of us possess an optical bench; the third because we have not got a complete series of spectacle lenses; the fourth because some of our cameras will not rack out sufficiently, and because the chance of error is very great; and Grubb's method, because it is not always convenient to find a distant object.

One of the simplest and most accurate methods, or at least one where the chance of error is small, is the following, which requires extremely simple apparatus, no skill, and only the use of a foot rule and a pencil and paper to multiply and divide one or two figures. The camera is placed upon a table, when convenient, or if such is not handy, on the ordinary tripod. We support on a wall, shelf, or convenient place a foot rule which is plainly marked in inches. On the ground-glass of the camera, a space of two inches is accurately marked, as near the centre as possible; it is merely necessary to mark off the two inches, not to divide it out into parts. The camera is now moved backwards or forwards till the image of the foot rule of 12 ins. just falls on the two-inch space we have marked out. The coincidence of the image on the lines should be examined with an eye-piece or compound focuser, to see that they do coincide, then the distance between the foot rule and the focussing should be carefully measured, and this distance jotted down, as from this we obtain the focal length of the lens. This number is multiplied by the figure which represents the proportion of the image to the original object, and the result is then divided by the square of the proportional number plus one. Taking an example, we find that the distance between the foot rule and its image equals 63 inches.

$$\therefore 63 \times 6 = 378;$$

$$378 \div 49 = 7\frac{7}{8} \text{ ins., the required focal length.}$$

It must not be thought that the above proportion between the object and its image is essential; any convenient proportion may be taken, such as 4, 5, 8, etc.; but the rule holds good with all.

There is one point in connection with the measurement of the distance between a lens and an object, and a lens and the focussing screen, which it is as well to note, and that is that the measurements should be from a point which is called the optical centre. In practice, however, this point may be considered to be the slit for diaphragms in doublet lenses, and the actual lens itself in single or landscape lenses.

Having determined the focal length, the next point is to determine the ratio aperture of the stops or diaphragms. This is by no means a difficult matter, and necessitates the use of a foot rule and a little calculation.

### RATIO APERTURE OF STOPS OR DIAPHRAGMS.

We will suppose that we have a doublet lens, the focal length of which we determined, as stated above, to be = 8 ins., and we have a series of six diaphragms, of which we desire to know the ratio aperture; that is, we want to know what ratio the aperture of the diaphragm bears to the focal length. It is only necessary to place the diaphragm on the foot rule, which should

be divided into sixteenths of an inch; read off the diameter of the aperture, and divide the focal length by this diameter, when we obtain the ratio aperture, or what is otherwise called *f/x* value of the stop. Now then the first diaphragm is found to have an aperture of one inch; we may say that this is one-eighth of the focal length, and we call this stop therefore *f/8*. The next stop is nearly three-quarters of an inch, and, this divided into eight, gives us eleven; this stop is then *f/11*. Treating all the other stops in the same way, we obtain *f/16*, *f/22*, *f/32*, and *f/45*. And these values are of importance in calculating exposure, and in their action upon the image transmitted by the lens, a subject we may treat of in another note.

## Notes from the Edinburgh Centre.

(By our District Editor.)

THE railway strike has been a very disturbing element in the history of the Photographic Exhibition, and has turned out to be a great misfortune, as it has cut off visitors during the Christmas holidays. The New Year is, however, the principal attraction in Scotland, and it is to be hoped that the railway service will be in its normal condition before then. I am informed that the loss of patronage during the holiday season is a serious matter to the Exhibition, and that anything like a substantial surplus need not now be looked for from it, but that it will, in all likelihood, pay its way. What more should be wanted? To educate the people in art should be a sufficient return for an exhibition, without making a money profit out of it.

Owing to the railway strike, in case you should not receive them in time, I write my notes earlier than usual. On this (Saturday) night, the awards in the Exhibition have not come out yet. They were in London getting signed, and are now either in Glasgow, or on the way to the Secretary in Edinburgh. After their arrival here they have to be signed by two of the jurors in Edinburgh.

The Exhibition entertainments, since I last wrote, have not been up to their previous standard. On Tuesday night Mr. Alfred A. Murray, M.A., LL.B. Edin., gave a series of lantern slides descriptive of a recent tour to Hamburg, Copenhagen, and Christiania. Mr. Murray's description of the places was interesting, but his slides he apologised for.

On Friday night Mr. H. J. Blanc, the President of the Edinburgh Society, started to deliver a lecture on "The Architecture of Normandy and Brittany," and had just delivered a very prettily-worded introduction and shown his first view when the lantern failed. The Chairman, Mr. G. G. Mitchell, of Edinburgh, explained that one of the gas cylinders had been supplied empty, and it was impossible to go on with the lecture. It was accordingly postponed till Tuesday night. The audience left in not the best of humours, many of them having given up special engagements to be present to hear what would doubtless have been, and will be, when delivered, a great treat. By the way, the lantern has not been very satisfactorily handled at any of the shows in the Exhibition. The lantern is all right, but the handling of it has not been so skilful as might have been desired.

**Lantern Society.**—At the meeting on December 22nd, Lieut. C. E. Gladstone, R.N., read a paper on "Some Architectural Features of Normandy and Brittany." The illustrative slides shown were made by the lecturer from his own 12 by 10 negatives on stripping films, taken during the past summer. The paper was principally intended to illustrate the characteristic marks of the ecclesiastical and domestic architecture of the country, and the differences between the contemporary styles in England and France were pointed out.

**Book Illustrations.**—When "process blocks" for book illustration are good, they are, as the song says, "Very, very good," but the continuation of the lines, "But when they are bad, they are horrid!" correctly describes all except those which are first-class. An important book on the "Palaeozoic Fishes of North America," by Professor Newberry, has just been issued by the United States Government, and the reviewer in *Nature* (December 18th) writes of the illustrations, "There are fifty-three plates, of which, unfortunately, little complimentary can be said. Eight of the latter are inferior process reproductions of plates that have already appeared elsewhere, and many of the others are so carelessly produced by the same photographic method that they give a very imperfect idea of the fossils they are supposed to represent."



## Exhibitions.

**EDINBURGH PHOTOGRAPHIC EXHIBITION AWARDS.**  
THE Council of the Edinburgh Photographic Society met on Monday night, and adjusted the following as the awards in their Exhibition:—

Class I., Landscape.—1, Richard Keene, Derby; 2, C. Digby Jones, Edinburgh; H.M., J. P. Gibson, Hexham.

Class II., Landscape.—1, F. Boissonnas, Geneva; H. P. Robinson, Tunbridge Wells; 2, J. P. Gibson, Hexham; H.M., G. Bruce, Duns.

Class III., Portraits.—1, J. Moffat, Edinburgh; 2, Marshall Wane, Edinburgh; Alex. Ayton, jun., Edinburgh.

Class IV., Portraits.—1, Window and Grove, London; 2, J. G. Tunny and Co., Edinburgh.

Class V., Portraits.—1, William Crooke, Edinburgh; 2, Marshall Wane, Edinburgh; Alex. Ayton, jun., Edinburgh.

Class VI., Figures.—1, J. H. Hogg, Kendal; 2, R. S. Webster, Edinburgh; Ralph W. Robinson, Redhill.

Class VII., Combination Printing.—No awards.

Class VIII., Genre.—1, Lyd Sawyer, Newcastle; 2, J. Terras, Markinch; H.M., A. Diston, Leven.

Class IX., Instantaneous.—1, Charles Reid, Wishaw; 2, Lyd Sawyer, Newcastle.

Class X., Architecture, etc.—1, William Mitchell, Dalkeith; 2, Richard Keene, Derby.

Class XI., Scientific.—A. Pringle, Bexley Heath; C. Piazzi Smyth, LL.D., Clova; Gambier Bolton, F.Z.S., London.

Class XII., Landscape.—1, J. Livingstone, jun., Edinburgh; 2, Dr. Stewart, Edinburgh; T. D. Duncan, Glasgow.

Class XIII., Landscape.—1, J. H. Forbes, Edinburgh; 2, J. K. Taylor, Buxton; H.M., J. E. Austin, Maidstone; R. Kidston, Stirling.

Class XIV., Landscape.—1, J. G. Patterson, Eskbank; 2, W. Mitchell, Dalkeith; Major Rodon, Glencorse.

Class XV., Prize Pictures.—No awards.

Class XVI., Lantern Slides.—1, Geo. W. Wilson and Co., Aberdeen; 2, James Dore, Sandown.

Class XVII., Reproductions.—1, Autotype Co., London; 2, James Patrick, Edinburgh; William Crooke, Edinburgh.

Class XVIII., Vitreous Enamels.—1, H. P. Robinson, Tunbridge Wells; 2, J. G. Tunny and Co., Edinburgh.

Class XIX., Photo-mechanical Prints.—1, Autotype Co., London; Walter L. Colls, London; James C. H. Balmain, Edinburgh; W. J. Annan and Son, Glasgow.

Class XX., Enlargements.

Class XXI., Apparatus.—1, G. Mason and Co., Glasgow; W. Wray, London; J. M. Turnbull, Edinburgh; 2, Wm. Hume, Edinburgh.

The Jurors have not been able to select any one picture of such prominent merit as to justify them recommending it for the Society's gold medal.



**"British Journal Almanack, 1891."**—We have received from the Editor, Mr. J. Traill Taylor, a copy of this most useful and comprehensive volume. The literary matter is of the usual *ollapodrida* order, and is contributed by men of every shade of opinion. Many good things are to be found, but by far the most useful section of the work is to be found in the collection of catalogues of firms supplying photographic materials. The firm not advertising in the "British Journal Almanack" must indeed be of "little reputation," and certainly have not an eye to their own interests. The advertisements are eagerly scanned by amateur and professional alike, and in this respect the "Almanack" is looked upon as a "guide, philosopher, and friend." From a note contributed to its pages by Mr. H. Nelson-King, we find the following analysis of the first "Almanack" published in 1861, and the present (1891) edition:—

	1891.	1861.
Pages of advertisements ... ..	498	44
Number of advertisers ... ..	248	58
Subject matter ... ..	406	62

These facts are encouraging to those like ourselves, who are starting upon an "Annual," and only proves the old adage, "from small things great ones grow."

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Bath.**—An ordinary meeting was held on December 17th, Mr. W. Pumphrey (President) in the chair. The subject before the meeting was a demonstration of enlarging with Hume's Cantilever apparatus. The Chairman undertook the demonstration, and in the course of his remarks said the tendency was now towards taking photographs of small size, especially quarter-plate, and then increasing the size afterwards as required. The great advantage offered was that they did not require to carry about an apparatus in the field which need embrace anything larger than the quarter-plate. That size he considered exceedingly convenient, and one which, if an enlarged picture were required, would admit of its being done equally as well as a direct picture.

**Birkenhead.**—The annual meeting of this Association was held in the Y.M.C.A. rooms, Grange Road, on the 16th December. There was an exhibition of slides by members, the slides submitted in the annual competition being also exhibited. The awards for the year have been as follows:—Class A, silver medal, for the best set of six pictures, irrespective of subject, for sizes over half-plate, from negatives taken during 1890—H. Wilkinson. Class B, silver medal, for the best set of six pictures, irrespective of subject, for sizes half-plate and under, from negatives taken during 1890—G. A. Carruthers. Class C, bronze medal, for the best set of six instantaneous pictures, irrespective of subject or size, from negatives taken during 1890—H. Wilkinson. Class D, bronze medal, for the best set of six stereoscopic pictures, from negatives, taken during 1890—A. F. Stanistreet. Class E, bronze medal, for the best enlargement, to be made not less than three times the area of negative (a print of the original negative must be attached to the enlargement)—W. Tomkinson. Class F, silver medal and bronze medal, for the best and second best set of four lantern slides, from negatives taken during 1890—1st, G. S. Thompson; 2nd, W. Tomkinson.

**Brixton and Clapham.**—A lantern exhibition was given at the London Hospital on Christmas Day by some members of the Brixton and Clapham Camera Club, the lantern being under the management of Mr. F. W. Levett, the Secretary of the Club. The slides were kindly lent by Mr. A. R. Dresser, the Editors of the AMATEUR PHOTOGRAPHER and the *Magic-Lantern Journal*, Messrs. Thomas and Co., and Mr. Walter Tyler.

**Cardiff.**—An ordinary meeting was held on the 19th December. The President presided. The first professional gentlemen to enrol themselves under the new rules were Mr. R. Forrest (Pontypridd) and Mr. Alfred Freke, of Cardiff. Two ordinary members were also elected, viz., Messrs. Fred Childs and Samuel Luce. Mr. G. H. Wills then passed Wilson's Abbey series of slides through the lantern, after which Mr. Scott, of Weston-super-Mare, proceeded to demonstrate the superiority of his warm-air saturator for lime-light, as compared with the ordinary mixed gases. The improvement was most marked.

**Derby.**—The monthly meeting of the above Society was held on the 23rd December, Mr. Bertwin Cooper presiding. The Chairman called upon Mr. W. T. Tucker, of the Loughborough Society, to give his paper, entitled "My Experience with a Hand-Camera." The lecturer dwelt upon the advantages derived from the use of a hand-camera for obtaining chance pictures, which would be missed by using larger apparatus, and the pleasure gained on a tour by dispensing with weighty and larger cameras. He then described his particular apparatus, and illustrated his remarks by handing round specimens of negatives and prints. A large and interesting collection of slides appertaining to the lecture and the work of Mr. Tucker were thrown on the screen by Mr. J. A. Cope.

**Enfield.**—At a meeting held on December 17th, Mr. Pinkney (President) in the chair, Mr. H. V. Clements was to have read a paper on "Development," but was unavoidably prevented from attending, so the President read it. Mr. Clements thought it important that all development should be carried on by artificial light of a standard illuminating power; by this means it was much easier to judge the exact density acquired than it was possible to do by the ever varying daylight. The method of looking at the back of the plate recommended by some was a very precarious way of judging, as it was, of course, dependent on the thickness of the coating of emulsion on the plate whether the high lights were only barely discernible on the back or very plainly delineated, therefore they should accustom themselves to judge the density of the plate by transmitted light. He advised beginners to select a formula, either one recommended by the maker of the plates they proposed using,



or one they knew some friend was using, and from which they saw he got good results, and then stick to it until it was mastered. Mr. Clements confined himself to two developers, viz., the pyro-ammonia and the hydroquinone, prepared according to Mawson and Swan's formula, and, when developing, started off with a weak solution, and gradually increased it until he got the desired result. He considered that if the plate were flooded with the normal developer at first, unless the plate was correctly exposed, the result must necessarily be faulty, and it was a very difficult task to make it presentable, and if much over-exposed it could not be saved. He would impress upon beginners the importance of having a *safe* ruby light, and of keeping the plate as much in shadow as possible, to prevent that fog for which many developers are blamed, and to see that the plate was covered with the solution free from air bells, but which were easily removed with a camel-hair brush or the finger. He used the latter, as he always knew where to find one in the dark. Mr. Clements contended that over-exposure was preferable to under-exposure, for when one knew how to use the chemicals, the former could be counteracted; but neither chemicals nor knowledge would compensate for the absence of light. He was convinced that slow development was the right thing, for in a quickly developed plate he believed the surface of the film was attacked too energetically at the commencement of the development, and the surface rendered hard and somewhat insoluble or non-porous, preventing to some extent the equable action of the developer at the back of the film, and causing the plate, when in the fixing bath, to lose much of its pluck and gradations, though apparently fully developed. In conclusion, he wished to impress on all beginners the fact that cleanliness was absolutely essential in every branch of photography. A short discussion followed.

**Glasgow.**—In connection with the Glasgow and West of Scotland Amateur Photographic Association, the monthly meeting on the 22nd December took the form of a "popular evening," when there was a large attendance in the Lecture Hall of the Philosophical Institution, the entertainment consisting of a photographic cruise, "Ninety Miles down the Thames from Oxford," illustrated by 200 limelight views, by Messrs. R. H. Elder, John Morrison, jun., and Thomas Taylor.

**Glasgow and West of Scotland.**—At the Glasgow East End Industrial Exhibition, the Society was represented by a large number of frames, some exquisite work being shown. The Exhibition was opened on December 23rd.

**Hastings.**—A very successful meeting was held on the 22nd December. First to occupy attention was the AMATEUR PHOTOGRAPHER Lantern Competition prize slides, which were described by Mr. Gibson. The next series shown on the screen were the slides illustrative of the White Mountains, New Hampshire, lent by the Boston Society. The views, which were described by the Rev. A. B. Cotton, were a very fine series, some being of high excellence. On view in the room were the AMATEUR PHOTOGRAPHER Travelling Studentship pictures, and the views taken at the Society's summer excursion competition were also shown.

**Leith.**—The usual monthly meeting was held on the 23rd December, Mr. William Dougall, President, in the chair. The principal attraction was a lecture delivered by Dr. Hugh Marshall, on the "Platinotype Process," accompanied by a highly successful demonstration.

**Lewisham High Road.**—The ordinary meeting was held on December 19th, Mr. Alfred H. Miles in the chair. A telegram was read from Dr. Dashwood, who was unavoidably prevented from attending to give his promised lantern slide exhibition. A number of slides belonging to the Secretary were shown instead, and after a collection towards the Daguerre tomb repair fund, the members entered on a

long discussion regarding the social meeting and loan exhibition, to be held January 9th.

**North London.**—At the general meeting on December 15th, Mr. A. Mackie in the chair, Mr. L. Medland showed some eikonogen powder which had been kept hermetically sealed in a tin, and yet, upon being opened, was found to have changed to a chocolate colour. Mr. Medland asked if it would still develop without stain. Mr. Mackie thought it would not make any difference in the development. Mr. Coventon said he thought, when the sulphite was mixed with it, it would be all right. Mr. Medland and Mr. Parfitt showed a new frame for fixing lantern slides in contact with whole, half, or quarter plates, so as to cover any piece desired, and to have the picture perfectly straight upon the slide. This was thought to be a very useful piece of apparatus, and is being manufactured and sold by Mr. Adams, of Aldersgate Street. Mr. Glover then submitted a series of questions upon collodio-bromide emulsion, which were answered by the Chairman and Mr. Medland. The Travelling Studentship Prize Pictures, kindly lent by the Editor of the AMATEUR PHOTOGRAPHER, were then passed round, and were very much admired, a number of questions being asked as to developer used and printing processes. An excellent programme has been arranged for the meetings of the society up to July, 1891. The next meeting will be on Tuesday evening, January 6th, when the Secretary will read a paper on "Night Work," with demonstrations in lantern-slide making, copying, enlarging, etc.

**Oxford.**—At the meeting held on the 16th December, an exhibition of the "White Mountains" slides, made by the members of the Boston Camera Club (U.S.A.), was given. A very enjoyable hour and a-half was spent by the 128 present. Some of the slides provoked much applause, particularly the "Fountain," "Wentworth Hall," the waterfall scenes, the "Fisherman," and the "View from Mount Washington." Mr. W. F. Palmer was elected a member. The meeting on January 6th will be a private exhibition of members' slides for members only.

**Sheffield.**—The monthly general meeting of this Society was held on 22nd December, when a lantern demonstration of members' work during the past year was given. Some very beautiful slides were exhibited by the President, Mr. G. T. W. Newsholme, Dr. Morton, Dr. J. A. Manton, and Messrs. J. H. Rawson, B. W. Winder, P. Slater, A. Copley, and G. E. Maleham. An interesting and animated discussion took place on their various merits, methods of production, development, etc.

**West London.**—The meeting on December 12th was a lantern night, Mr. W. A. Brown in the chair. The Chairman referred to the forthcoming amateur exhibition, to be held on the 9th and 10th January. Slides by Messrs. Dixon, Varden, Wilson, Whiting, Chang, J. M. Dicken, Livingstone, and others were then exhibited, the series being concluded with a fine set lent by Mr. Dresser.

**Woolwich and District.**—At the ordinary fortnightly meeting on the 18th inst., Mr. Burnham, B.Sc., gave a very interesting and instructive lecture on "Photographic Chemistry," with experiments, etc., the conclusion of the lecture being postponed till January 1st.

**Worcester.**—At a meeting on the 9th December, Mr. W. A. Firkins in the chair, it was resolved to invite the Mayor (Mr. W. R. Higgs) to become President for the ensuing year. A question from the question-box, as to the effect of exposure of plates and bromide papers to actinic light between the processes of developing and fixing, was discussed, and the members present freely expressed their views upon the subject. A number of enlargements, kindly lent by the AMATEUR PHOTOGRAPHER, were exhibited; also the prize slides kindly lent by *Photography* were shown on the screen, the lantern being worked by Mr. J. Cam.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign

all Queries and Answers with name or *nom de plume*.

4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance, the *number and full title of the query* referred to.

## QUERIES.

4420. **Development.**—How long should an instantaneous photograph on Ilford extra-rapid plate take to develop with pyro and ammonia developer?—**P. G. SCHOLEFIELD.**

4421. **Mounting Prints.**—What is the best solution for fixing Continental photographs in an album?—**P. G. SCHOLEFIELD.**

4422. **Frost on Windows.**—What is the best way to take a negative of this for a lantern slide?

Should the camera be inside or outside the house? About what exposure on ordinary plates, and what stop?—**H. H. W.**

4423. **Camera Adapters.**—I have a 7½ by 5 camera, but wish sometimes to take a whole-plate or a 12 by 10 view. Can any correspondent state his experience with adapters fitted to back of camera? Are they convenient, and do they weigh much?—**ADAPTER.**

4424. **Bromide Paper and Hydroquinone.**—Can anyone tell me whether it is possible to develop Eastman's bromide paper with hydroquinone? I have tried several times, but fail to obtain any results. I carried out the instructions on the paper enclosed in the packet.—**BROMIDE.**

4425. **Reduction.**—What should be the exposure in reducing from 5 by 4 to lantern size, using a wide angle lens, 6 in. focus, working at *f/16*, average light at this time of the year, negatives being fairly dense, using Thomas's, Mawson's, and Fry's lantern plates, and developing with hydroquinone and carbonates? A black tone with full details preferred.—**RHIP.**

4426. **Perfect Brand of Paper.**—Will "Hamish" kindly name the perfect brand of paper he uses?



Also, would he say if a vigorous black tone can be got, and if to be purchased in Leeds?—NIMROD.

4127. **Building Amateur Studio.**—I am building a new workshop, and can spare a portion of the attic room, 22 ft. long, for a studio. Workshop is 16 ft. wide. Will some reader with practical knowledge inform me what skylights and windows will be required, and where they should be placed? Roof slopes north and south.—HERKWARD THE WAKE.

4428. **Combined Enlarging and Optical Lantern.**—Will some one kindly tell me of a good combined enlarging and magic lantern? I should like it to enlarge from  $\frac{1}{4}$  by  $\frac{3}{4}$  up to 15 by 12, the lens and everything included, and to be able to enlarge on to plates if desired, instead of bromide paper, and to do equally well for a magic lantern for home use, or for enlarging purposes, for about £12. Would W. Watson's enlarging lantern answer these requirements satisfactorily? It is £12 10s., including the front lens. Would it be all that is required, or should I have to use my camera with it?—MAHDI.

4429. **Transferotype.**—Will anyone kindly inform me where I can procure transferotype, as Eastman's does not make now?—KENDAL.

## ANSWERS.

4371. **Lenses.**—Swift, Ross, Dallmeyer, Beck, Taylor, Crouch. I consider the first three of equal merit. I have used lots of Swift's lenses, and could not wish for more perfect workmanship. They are a trifle cheaper than Ross's and Dallmeyer's; but from a long experience I am convinced they cannot be surpassed.—VIATOR.

4417. **Stereoscopic Work.**—See Mr. Valentine Blanchard's articles, which have just appeared in the *AMATEUR PHOTOGRAPHER*.—MEMNON.

4418. **Tricycle and Camera.**—One of the Crippler type. A good carrier is given in the "British Journal Almanac" for 1891, p. 618. Cushion tyres are still on trial.—MEMNON.

4419. **Lantern Slides Wanted.**—Try G. W. Wilson and Co., Aberdeen; Wood, Cheapside; Newton, Fleet Street; York and Son, 87, Lancaster Road, Notting Hill. The latter advise specially for foreign ones.—ISIS.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PROT.

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**JOHN TANNOCK.**—We place in the following order—dry plates, 3, 1, 2; lenses, 2, 1. shutters, 2, 3, 1. THOS BURNELL.—Lenses as follows—1, 3, 2. The stops of the EurySCOPE are exactly the same as the rectilinear, except, as you say,  $\frac{1}{6}$ .

**WALTER L. NASH.**—Mawson's photo-mechanical plates you will find the most suitable, as they are made specially for this purpose.

**MISS L. RIDLEY.**—You may certainly rely upon the firm for anything that they advertise. With regard to your print sent us last week, we find distinct traces of hyppo, which would account for every spot you have yet come across.

**NOTICE.**—The portrait lens is very much quicker, and certainly gives softer and rounder images. You give us no data as to plates and developer. Let us know about these and we will help you, but till you can turn out better work than that sent you had better stick to your present lens. Probably you are wrong in developing.

**REV. H. TUGWELL** (Lagos, W. Africa).—Your note received; we will write you by next mail.

**HOLDBIVEN.**—All the prints would look better if mounted on larger mounts, so as to show at least half an inch of tint. (1) Good, but would have been better if all the cottage had been taken in. (2) Very fair. (3) Fair, spoilt by the pink paper. (4) Very fair. (5) Good, but the church tower is slightly out of perpendicular, due to the camera not being level. (6) Very fair; the expression on girl's face, however, is hardly easy enough to suit her position; she ought to make a good study by herself. We hope soon to welcome you as a competitor and as a prize winner, as the work shows good merit.

**J. A. CARTER.**—(1) Chiddingstone, much too thin. (2) Winter, too thin. (3) Dawlish, the houses are all falling down. How did you get this colour? (4) Merry Christmas, not good. (5) Oattie, fair. (6) Godstone Road, the camera was hardly necessary on the right. You are inclined to get your slides too thin, and the colours of all are not pleasing.

**G. D. (Paris).**—They can both be got from the Sensitised Opal Card Co., Ltd., 18, Alpha Road, London, N.W.

**SUBSCRIBER.**—You will be quite safe in purchasing either lens you name; there is little, if any, difference between them.

**DONALD.**—The camera you mention will answer all the purposes for which you require it.

**T. W. BACON.**—We send you an extract from the reply sent us by the Eastman Company.

**A. HARRISON.**—Your communication has much to commend it; but it is too lengthy for publication. Still, we will take an opportunity of calling attention to your proposals, and lay the letter before two or three influential amateur photographers. Will write you later on.

**CLEMENT J. LEAPER.**—The drawings now sent shall be blocked the same size.

**ALEX. KEIGHLEY.**—Many thanks for letter and good wishes.

**W. CHARLES.**—Pleased to have your letter. The Edinburgh awards are published in this week's *AM: PROT*.

**H. KINDERMANN.**—We intend to arrange to have the prize stereoscopic slides on view, and will announce the date shortly.

**X.**—The question of price is one that is usually settled on the broad basis of supply and demand. We do not care to have the matter discussed in these columns.

**X. Y.**—You have not endorsed your query with name and address, therefore it is not answered.

**PERCY SHEARD.**—The matter has been exposed in other journals, and we fear that we have not much sympathy for those who expect to get a "two guinea life-size portrait free of charge."

**E. B. WAIN.**—Thanks for the lion story, which we regret we cannot utilise, owing to the many calls upon our space.

**F. C. PETERS.**—We will give the subject suggested in your letter early attention.

**F. R. UPOTT.**—No further sales have been effected.

**JOHN POWER.**—We have sent your complaint to the Secretary of the Photographic Manufacturers and Dealers Association, 7, Southampton Row, W.C. They are the proper people to deal with the subject.

**IMPISI.**—Yours is really a too awfully lovely letter; but hardly O. K. to publish. We must try and read it at the next meeting of the members of the "Photo-aesthetic-naturalistic-impressionistic-fuzzigraphic Club" we are invited to attend. Shall be in Ventnor the week after next, hope to call upon you.

**G. W. MACKEY.**—Photographs contributed to the *AMATEUR PHOTOGRAPHER* "Monthly Competitions" must be mounted, not framed.

**J. E. HARDWICH.**—Will write to you.

**J. W.—No;** it is probably a fanciful name from *sol*, the sun, and *grapho*, to write.

**O. V.—In** the following order—C, A, B.

**H. MANNING.**—Decidedly No. 1. The lens is a fixed focus one. The shutter of No. 2 is inferior.

**ACCESSORY.**—Cost the balustrade with rather thick size, and whilst soft and tacky, dust on coarse silver sand, or use a thin glue.

**LOUIS MELDON.**—We do not think you will get what you want without specially preparing it yourself. The quality depends so much upon the manner of salting and sensitising. Do you mean a quick printer, or one giving more contrast, by "brisk"? We do not know what the solutions are, but if you will answer the above question we will write you privately, and give you a new formula for this toning. The platinum salt may be had from almost any photographic dealer, but specially from the Platinotype Company.

**E. L. DELARNE.**—Can you come up some Monday afternoon, between 2 and 5, and bring the camera with you, or else send us the camera with some of your failures, and we will examine it carefully, and then give you our report; fee, 2s. 6d. We can then answer your questions satisfactorily; at present we are utterly at a loss to know where the fault lies. The lens is certainly a good one.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny Stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such adver-

tisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 6d. to cover postage.

**Cameras.**—Fallowfield's Facile, cost £1 4s., in first-rate condition; take £3, or offers.—No. 89, *AMATEUR PHOTOGRAPHER* office, 1, Creed Lane, London, E.C.

**Cameras, etc.**—Complete apparatus for photography, camera, microscope, etc., on base-board, new; £5.—Burr, Westgate, Gloucester.

**Sands and Hunter** tourist camera, 13 by 18 centimetres, three double backs, waterproof case, tripod; £6. If desired, Eastman roll-holder to fit; £2.—E. P., 34, Upper Baker Street, London.

**Cameras, Lenses, etc.**—Lancaster's Special 1883 camera, brass-bound, 15 by 12, one double back, carriers, 12 by 10, 10 by 8, Le Meritote lens, and tripod to match, all as good as new; lot £10.—D. T. Field, Clent, near Stourbridge.

**J Half-plate camera,** three book backs, in best waterproof case, every possible movement, 70s.; whole-plate French rectilinear, with Taylor's Iris diaphragms, a splendid instrument, £23 10s.; Kershaw shutter, to fit above, 15s.; Optimum half-plate W.A., quite new, 40s.—H. N. Cooper, 54, Chester-gate, Stockport.

**5 by 4, double extension, modern, lens and slide, all movements, 28s.; band camera, automatic changer for 12 quarter-plates, with lens, finder, etc., in perfect order, 42s.—T. Mercer, 16, King Street, Sparkbrook, Birmingham.**

**Developing Tents.**—Marion's square shape, complete with table and sink, cost £4 4s., take £2; Rouch's, complete with tripod, take £2.—No. 89, *AMATEUR PHOTOGRAPHER* office, 1, Creed Lane, London, E.C.

**Enlarging Apparatus.**—Quarter-plate enlarging apparatus; send stamp for description and sketch; price 25s.—Tooth, Stephen Street, Rugby.

**Enlarging Lantern.**—Watson's £6 15s. enlarging lantern,  $\frac{5}{8}$  in. condensers, front lens, 4-wick lamp, perfect condition; £4 5s.—Miss Galloway, Thirkleby Park, Thirsk.

**Hand-Cameras.**—Talmer hand-camera, new last week, perfect order, sell cheap.—Evans, Tannery, Minehead, Somerset.

**Camera, Rouch's** detective, in perfect order, £2 10s., with case; also Newman's shutter, new, 10s.—T. J. O'Connor, 5, South Cr. Road, Dublin.

**Abraham's** hand-camera, Kerr's patent, in good condition, with Wray lens, 5 by 4, open aperture  $\frac{1}{5}$ ; cost nearly £9; will sell for £5 10s.—W. F. Jones, 1, Finsbury Square, E.C.

**Lenses, etc.**—Lancaster's 10 by 8 landscape lens, will take 14s.; Lancaster's wide-angle Rectigraph lens, quarter-plate,  $\frac{3}{4}$  in. focus, will take 23s. 6d., both in excellent condition; 12 lantern slides, Lincoln Cathedral and Gateways, for 10s.; good half-plate set wanted, must be cheap for cash.—Birkbeck, 5, Balgait, Lincoln.

**Sundries.**—"British Photographic Journal," last 4½ years to date, clean, perfect, at 6d. per dozen; also few copies "News" and "Journal" Almanacs, 5d. each.—Hooper, Cumberland Road, Hanwell.

**AMATEUR PHOTOGRAPHER**, Nos. 222 to 288, complete and clean, also eight of the extra issues, 7s. 6d.; "Photography," vol. ii., complete in numbers, 3s.; 12 ft. lantern screen, frame, jets dark-tent, and other articles.—Particulars from H. G. Irwin, 29, Albert Road, Dalston, London, N.E.

**136 numbers of AMATEUR PHOTOGRAPHER**, 11s.; 36 7d. numbers "Our Earth and its Story," 14s. Wanted, Griffiths' guinea detective camera, cash and exchange.—B. Manell, 24, Bilston Street, Wolverhampton.

**AMATEUR PHOTOGRAPHER**, complete to date, eight vols. bound, remainder unbound, sale or exchange. Offers to O. J. Leaper, 4, Chester Road, Dublin.

## WANTED

**Artists' Lay Figure.**—State price, etc., to T. G. Whaithe, Photographer, Carlisle.

**Cameras, etc.**—Whole-plate camera and three slides, Opimus EurySCOPE lens (by Perken, Son, and Rayment), case, and folding tripod, all must be in first-class condition.—Sydney Miller, 23, High-bury Grove, Islington, London.

Useful quarter-plate camera and tripod, must be cheap; approval.—J. Harriman, Henley-on-Thames.

**Enlarging Lantern.**—To hire for a fortnight an enlarging lantern, with or without stand lens not required, condenser must be 8½ in.—Rev. T. G. Vyvyan, Charterhouse, Godalming.

**Hand-Camera.**—Fallowfield's Facile hand-camera, in good condition, cheap.—Graham, Springhill, Bowdon, Manchester.

**Lantern.**—Lantern, must be big enough for Hughes' Pamphengos 3-wick lamp.—Hardwich, Wells, Somerset.

**Set.**—Cheap for cash, half or whole plate apparatus, modern, and in good condition; approval.—W. Stennett, jun., Billingham, Fellingham, Lincolnshire.



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## NOTICES TO SUBSCRIBERS.

Subscriptions must be prepaid.

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POSTAL UNION .....	6s. 6d.	12s. 0d.
INDIA, CHINA, ETC. ....	7s. 9d.	15s. 3d.

## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the *Amateur Photographer* are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the *Amateur Photographer* are to be addressed to FARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or Apparatus for Notice or Review are to be addressed to the Editor, *Amateur Photographer*, 1, Creed Lane, Ludgate Hill, London, E.C.

**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.**—Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the Editor, *Amateur Photographer*, 1, Creed Lane, Ludgate Hill, London, E.C.

## "AMATEUR PHOTOGRAPHER" MONTHLY PHOTOGRAPHIC COMPETITIONS.

THE PROPRIETORS of the *AMATEUR PHOTOGRAPHER* offer, Monthly, two prizes consisting of a

SILVER AND A BRONZE MEDAL (WITH RIBBON AND CLASP),

for the best and second-best photographs sent in to each of their Monthly Competitions. The subject of the Competitions will be as follows:—

No. 21.—ANIMALS AND INSTANTANEOUS SUBJECTS .....	Feb. 2.
" 22.—SNOW AND HOAR FROST .....	Mar. 2.
" 23.—INLAND SCENERY .....	April 2.

Only one print is to be sent in; the negative of the prize pictures shall be at the service of the Proprietors, and all the prints sent in shall become the property of the Proprietors of the *Am. Phot.*

All photographs for any of the above competitions will be acknowledged in the columns of the *AMATEUR PHOTOGRAPHER*.

All photographs criticised, and several reproduced every month, in the *Photographic Reporter*.

Entry forms on receipt of stamped addressed envelope. Apply to the Editor, *Amateur Photographer*, 1, Creed Lane, Ludgate Hill, London, E.C.

## SPECIAL COMPETITION,

ILLUSTRATING THE

### "SEVEN AGES OF MAN,"

As described in Shakespeare's Play "AS YOU LIKE IT" (Act II, Scene VII.)

FIRST PRIZE .....	GOLD MEDAL.
SECOND " .....	SILVER MEDAL.
THIRD " .....	BRONZE MEDAL.
FOURTH " .....	CERTIFICATE.

**CONDITIONS:**—That the Photographs shall be from life, in the costumes and with the surroundings of ordinary daily life. Photographs in which the subjects have been "got up" will be rejected.

The prints may be by any process. The prize photographs will become the property of the Proprietors of the *AMATEUR PHOTOGRAPHER*, who will have the right to call for the use of the negatives.

All the work must be done by the Competitor. The photographs are to be mounted, and the title, with quotation from the play

neatly written or printed upon the mount. Each photograph is to be numbered in the order of the "Ages."

All contributions must be received on or before Saturday, 31st January, 1891, addressed:—"Seven Ages of Man,"

EDITOR:—*AMATEUR PHOTOGRAPHER*,  
1, Creed Lane, London, E.C.

## "AMATEUR PHOTOGRAPHER" MONTHLY LANTERN SLIDE COMPETITION.

Prizes:

SILVER AND BRONZE MEDAL AND CERTIFICATE.

	Prizes:	LAST DAY.
LANDSCAPE, SEASCAPE, AND RIVER SCENERY ..	First Competition.	Jan. 22nd.
PORTRAITURE AND FIGURE STUDIES ..	Second Competition.	Feb. 19th.
ANIMALS AND INSTANTANEOUS PICTURES ..	Third Competition.	Mar. 19th.
ARCHITECTURE (INTERIOR AND EXTERIOR) ..	Fourth Competition.	April 16th.

The Competitions will be resumed in September.

**CONDITIONS.**—Each competitor must send in two slides. Any competitor winning a Silver Medal will be disqualified from entering the subsequent Monthly Lantern Slide Competitions. The winner of Bronze Medal or Certificate can only compete for the higher prize or prizes in subsequent competitions.

The awards will be published in the *AMATEUR PHOTOGRAPHER*, and a general note given upon each competition.

The slides of competitors which do not gain a prize will be divided into three classes, according to merit, and the competitors' names, etc., published in the *Photographic Reporter*.

All slides entered for competition to become the property of the *AMATEUR PHOTOGRAPHER*.

**NOTE.**—The slides will be passed through the lantern at the Office of the *AMATEUR PHOTOGRAPHER* on the Monday evening in each month immediately after the date upon which the slides have to be received.

Particulars as to admission, and entry forms, may be had by forwarding stamped directed envelope to

THE EDITOR,  
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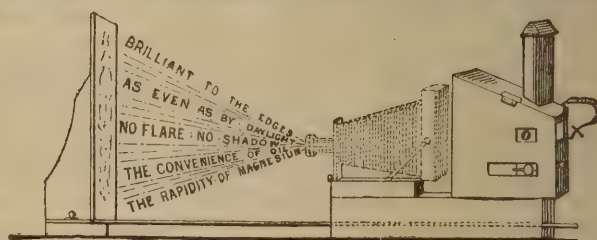
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# The AMATEUR PHOTOGRAPHER

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Offices: 4, Gresham Lane, Ludgate Hill, London, E.C.

VOL. XIII. No. 327.]

FRIDAY, JANUARY 9, 1891.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

[Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]

THE Monthly Competition, No. 20, "Portraiture and Figure Study," contains a considerable number of excellent prints, and though there was no difficulty in awarding the first prize, much time was taken up in deciding which print should receive the second.

*First Prize (Silver Medal).* . W. SMEDLEY (Derby).

This competitor's contribution is a print from a 10 by 8 negative, the subject being "My Sister." The picture is the study of a head, taken with a Ross Universal lens,  $f/20$  stop, with an exposure of four seconds in a dull light. The posing and lighting are all that could be desired, the face being beautifully soft, and the purple tone obtained by tungstate toning on Scholzig's matt-surface paper is very suitable. A reproduction of this picture will form the frontispiece to the *Photographic Reporter* for February.

*Second Prize (Bronze Medal)* . . MRS. S. F. CLARKE (Louth).

This lady sends a print from a 7 by 5 negative, the subject being "Au Revoir." The negative is taken on a Beernaert plate, with an R.R. lens, stop  $f/11$ , a two seconds exposure having been given in a good light, the subject being in shadow, and the print on Scholzig's matt-surface paper, toned with borax and gold. The subject is a poetical one, and shows a beautiful girl standing at an open door, holding a rose to her lips, and evidently bidding *au revoir* to a departing but invisible lover.

Amongst the other prints sent in is an excellent portrait of a lady, by Mrs. Benyon (Huntingdon), taken on an Edwards Isochromatic plate, with a Voigtlander lens, printed on silver paper. It is a charming picture. Mr. Gilbert R. Betjemann (London) sends a portrait of "A Professor of the Royal Academy of Music" (Herr. Ad. Schloesser). It is taken on an Ilford ordinary half-plate, with a Beck R. R. lens, stop  $f/11$ , with an exposure of one-eighth of a second out-of-doors. Ilford bromide paper has been used with good effect. Dr. T. Johnston English (London) sends "a study" of a girl in Greek dress, taken on a 10 by 8 Fry's sixty-times plate, with a Ross Universal lens, full aperture, with six seconds exposure in an artist's studio. The print is on matt-surface paper, and is toned by Lyonel Clark's platinum process. The picture is good, and the lighting excellent. Mr. John Seed (Harlesden) sends an Alpha print of a group, "Mrs. Jarley's Wax-work

Show." The negative was taken with a Dallmeyer's R.R. lens, stop  $f/16$ , with one and a-half seconds exposure, in a bright diffused light, on a Pall Mall E.R. plate. The grouping is very fair, and the portraits excellent. Mr. J. C. Oliver (Glasgow) contributes a platinotype print of a child, "Olga," taken on an Edwards Isochromatic plate, with a Ross R.S. lens, stop  $f/8$ , and one second exposure on a cloudy day. The print is very soft, and does credit to the worker.

WE have decided upon starting yet another department, in this case of an educational character, viz., "Examinations in Photography." Each week questions will be set in the columns of the AMATEUR PHOTOGRAPHER, and marks awarded for answers, the best three of which will be published in the issue of fourteen days later. Prizes will be awarded to the three competitors securing the highest number of marks during the period of three months. These examinations are intended to encourage the study of the theory and practice of photography; therefore, authorities upon photographic matters and contributors to the photographic journals will not be allowed to enter the competition.

THE Birkenhead Photographic Association is suspending its ordinary meeting on the 15th inst., for the purpose of enabling the President (Mr. G. E. Thompson) and Miss Thompson to give a reception and soirée. Tea and coffee is to be provided. There will also be music and a lantern exhibition of members' work.

IN the list of the Edinburgh Photographic Exhibition awards supplied to us for our last week's issue, the names of those who won the prizes in Class XX.—Enlargements—were omitted. The silver medal was awarded to Mr. F. H. Worsley Benison, and the bronze medal to Mr. T. G. Whaite.

AT the request of several intending competitors, and owing to the very indifferent weather that we have had, it has been determined to extend the time for sending in prints to "The Seven Ages of Man" Competition until Saturday, the 28th of February.

A CORRESPONDENT writes in regard to the line (from "As You Like It") "Bearded like the pard," that "It appears to be very generally misunderstood. I think it refers to



the ferocious horizontal moustaches worn by soldiers—the pard being the leopard, which has only the cat-like whiskers, as we call them.”

In another column we publish a list of the contributors to the AMATEUR PHOTOGRAPHER “Holidays with the Camera” Competition. The following is an analysis of the entries:—

Class I.,	“Niepee,”	or Progressive Gold Medal.	One.
“ II.,	“	“	Silver “ ..None.
“ III.,	“	“	Bronze “ ..Two.
“ IV.,	AMATEUR PHOTOGRAPHER	Gold	“ ..Seven.
“ V.,	“	“	Silver “ ..Fourteen.
“ VI.,	“	“	Bronze “ ..Twenty.

In all we have forty-four competitors, and are sure that the selection which we shall publish will be of very considerable interest. The photographs are all interesting, and the members’ account of the holidays will provide excellent reading matter in “Holidays with the Camera.”

THE Ventnor and Bonchurch Photographic Exhibition will open on Monday, the 19th inst. We understand from Mr. W. Hoskin, the energetic Hon. Secretary, that the exhibition promises to be very successful. The judges are to be Dr. Lord, the Hon. Secretary of the Southsea Amateur Photographic Society, Mr. T. M. Brownrigg, of Guildford, and Mr. J. Fielder, of Chichester. The AMATEUR PHOTOGRAPHER 1890 Prize Lantern Slides will be shown on the evening of the 19th in the Assembly Rooms, Mr. Charles W. Hastings acting as demonstrator.

THE coincidences of thought in journalistic work are often strange. The Editor of the *Practical Photographer* draws our attention to the fact that he has arranged to publish Burnet’s third Essay, “The Education of the Eye,” reproducing the illustrations. So that, as he says, in the present year those who cannot afford the expensive edition with its valuable plates, will have the opportunity of obtaining the whole of John Burnet’s works in serial form.

MANY of our readers will be concerned to hear of the decease of Mr. William Adcock, of Melton Mowbray. This gentleman was one of the earliest supporters of this journal, and received a second prize, a Silver Medal, in connection with the first “Home Portraiture” Competition in 1886. He was a constant contributor to the correspondence columns. He was also an early member of the Camera Club, and we find he read the first paper, “Sitting-room Portraiture,” of importance contributed by any member of the Club; certainly it was the first reported, and will be found in the *Am: Phot: vol. iii.*, No. 72, February 19th, 1886. At that time Mr. Adcock was “a practical and successful worker in figure subjects, taken at home, and his large direct portraits were known to most frequenters of photographic exhibitions;” so wrote the Editor of this paper. Mr. Adcock was a most genial and courteous gentleman, and one who was ever ready to assist either professional or amateur photographers. He died at the ripe age of 69, and was, we understand, up to the day of his death, an enthusiastic worker in photography.

THE last day for receiving applications for space at the Liverpool, 1891, Photographic Exhibition has been fixed, viz., the 20th inst. We understand that the Exhibition will be an immense success, and that all the members of the Liverpool Society are most enthusiastic. In another column, Mr. T. S. Mayne, the Hon. Secretary of the

Exhibition Committee, replies to the letter published last week from “A Possible Exhibitor.”

WE are pleased to note that one result of the recent *free* exhibition of photographs at Louth has been the election of no less than twelve new members of the Louth and District Photographic Society.

THE following short note upon the life and work of the author of “Burnet’s Essays” will be read with much interest at the present time:—

“John Burnet was born at Musselburgh, near Edinburgh, on March 20th, 1784. His first art principles were received from Mr. Leeshman, the master of Sir Walter Scott, and he was apprenticed to Robert Scott, an engraver, whom he served the then usual time of seven years, learning the practical part of etching and engraving. He attended during his apprenticeship the daily classes of John Graham at the Trustees’ Academy, where, with David Wilkie and William Allan, he studied painting.

“In 1806, induced by the success and fame of his fellow-student, Wilkie, he visited London, and thus Burnet describes his arrival in London: ‘Wilkie having preceded me by twelve months, the fame created by his picture of the “Village Politicians” produced such a sensation in Scotland, that I hastily finished my engraving and set sail for London in a Leith smack. On my arrival at Miller’s Wharf, I seemed to feel—what most Scotchmen feel—“ample room and verge enough,” and though with only a few shillings in my pocket, and a single impression from one of my plates for Cooke’s “Novelists,” I felt myself in my proper element, having all that confidence peculiar, I believe, to my countrymen. I went instinctively towards Somers Town, where many of my brother artists resided, and next morning to No. 10, Sol’s Row, Hampstead Road, to call on Wilkie. He was delighted to see me, and exclaimed, “I am glad you are come, for London is the proper place for artists.” On his easel was the picture of the “Blind Fiddler,” which struck me as a wonderful work for one who had seen so little of such paintings in his youth. My first engravings after settling in London were for Cooke’s “Novelists” Britton and Bayley’s “England and Wales,” Mrs. Inchbald’s “British Theatre,” etc., but I longed for some larger work upon which to employ my graver, and bespoke the engraving of the “Jew’s Harp,” of the same size as the painting.’

“The success of this engraving led to a rapid and masterly series of engravings from Wilkie’s pictures, which even now are well known and sought after. After the peace of 1813, he went to Paris, studying and copying in the Louvre for five months. He then returned to London, and joined the association of engravers (brought together by Mr. Sheepshanks) who illustrated a series of pictures in the National Gallery.

“Burnet confined himself not alone to engraving, but was as well a painter of no mean merit; but he himself said, in speaking of his early training, ‘I have often thought that my following the profession of an engraver and painter at the same time, cramped the greater extension of either, as both are of sufficient difficulty to require the undivided attention to arrive at a high degree of excellence.’ His most famous paintings are ‘The Greenwich Pensioners,’ a companion picture to Wilkie’s ‘Chelsea Pensioners,’ ‘The Draught Players,’ ‘The Humorous Ballads,’ and ‘A Windy Day.’

“His great fame, however, rests on the foundation of his writings on art. His first treatise, ‘A Practical Treatise on Painting,’ in 1827, was followed by ‘An Essay on the Education of the Eye,’ 1837, ‘Practical Hints on Light and Shade,’ 1838, ‘On Colour in Painting,’ in 1843, ‘Rembrandt and his Works,’ in 1849, ‘Turner and his Works,’ in 1852, and many others.

“In 1836 he gave valuable evidence before a select Committee of the House of Commons, on arts and manufactures, and as a writer on art he achieved, and still maintains, a deserved reputation. His thorough knowledge of his profession, both as engraver and painter, and his sound and sober judgment, give his writings a value often wanting to those of more brilliant authors” (“Dict. Nat. Biography”).

In 1860 he received a pension from the Civil List, and retired to Stoke Newington, where, like many of his fellow artists, he passed in straitened circumstances the last years of his life, dying in April, 1868, *at etat* 84.



## THE CAMERA CLUB.

WITH the beginning of the new year the Camera Club enters upon a new lease of existence, for, with its additional articles conferring upon the company enlarged powers, has come a considerable augmentation of the members' list, and now the Club is taking possession of the handsome and commodious building which has been erected for it in the Charing Cross Road. Most decidedly, therefore, the officers and committee who have guided the destiny of the Club to its present flourishing condition deserve complimenting on the successful outcome of their labours, and the members are to be congratulated on obtaining in so central a position the largely increased conveniences which their new home will afford them.

As certain features in the history of this Club—which is the outcome of a correspondence and suggestions communicated to this paper by various enthusiastic amateur photographers in the months of April and May, 1885—may be of interest to some of our readers, we propose referring to a few details in connection therewith, but before doing so it may not be considered out of place if we enumerate some of the enlarged facilities, both in the social and photographic departments, which the new Club-house will afford. As this building is probably the first of its kind which has ever been built, a certain interest must of necessity attach thereto. We feel justified in calling it a pioneer edifice, for although amateur photographers are to be found united together in societies and clubs in nearly all the large towns of the world, we have not heard that any Society elsewhere has possessed a roll of members sufficiently large, or a banking account that has justified them in erecting and furnishing a house expressly adapted for their necessities. The Society of Amateur Photographers of New York are very comfortably domiciled, as we described in a leading article upon "New York Photographic Societies," in our issue of October 3rd, 1890, but they are confined to one room, which, although it is an exceptionally extensive one, and is ingeniously adapted to supply all the photographic requirements of the members, yet lacks of necessity all the social attributes of a club, for no room could possibly be supplied wherein the wants of members in this direction could be catered for. Hence the London Camera Club is the first of which we have any knowledge where the two elements are united in a successful manner, and who now own a building with suitable accommodation. From this, as well as from other points of view, the actions of the Camera Club must have a certain interest for all photographic social circles, and we have therefore no apology to make for referring to matters which under the ordinary circumstance attaching to clubs in general, might be considered by the members as being of an exclusive character, affecting them alone, and therefore outside the domain of public concern.

The new building, which, as before-mentioned, is situated in the Charing Cross Road, on the same side and within a few doors of the Garrick Theatre, has an imposing exterior, for it is five stories high, is built of brick and red stone, with numerous carved decorations, and is well lighted by large plate windows. The ground-floor, excluding that portion of it forming the entrance hall and porters' lodge of the Club, from which a dividing wall separates it, has been made into a shop of good proportions, for it was the part least required by the Club, and the site, being an exceptionally good one, its rental will form an item not to be despised in the revenue account.

The basement has been utilised by erecting therein nine separate dark-rooms (to which we shall again refer), a photographic work-room for general purposes of fair dimensions, and in addition to these conveniences a large number of

roomy lockers are to be fitted up in this part of the building, which will be let to those members who may wish to have the use of one of these private storing places for a moderate and nominal fee.

On the first floor a large and handsome room is now being fitted up, which, under every-day circumstances, will form the smoking or general assembly room of the club, but it is being so arranged that with very little trouble it can readily be converted into a lecture hall capable of accommodating a very large percentage of the members, a convenience which will no doubt be highly appreciated by the numerous frequenters of those special "Thursday evenings" which have given the Camera Club a considerable amount of its deserved popularity. A feature of this room will be the admirable facilities it will afford for lantern entertainments, for it is lofty, and a portion of the wall is being specially prepared to act as a screen, an arrangement which cannot be surpassed in its suitability for showing up the beauties of a picture thrown upon it by the projecting lantern. In addition to this, we are given to understand that it is the intention of the Committee who have charge of these arrangements to obtain a lantern that shall be an exceptionally good one.

On the floors above are to be found a dining-room, large billiard-room, a cosy and snug library, committee and secretary's rooms, and, in addition to the kitchen, still-rooms, and servants' offices, a well-lighted workshop for the mechanical division of the Club is now being fitted up. On the top of the building a photographic studio, with two more dark-rooms, which any London photographer might envy, are now being suitably furnished. Here also are enlarging rooms, and the requisite appliances for nearly every branch of photographic work are to be supplied as soon as the building is completely finished.

The dark-rooms are models of perfection, for, of course, they possess the advantage of having been designed with a view to supplying members with perfect comfort and all the necessary conveniences. The ventilation of the whole Club, and especially of the dark-rooms, has been carried out in a most successful manner on strictly scientific principles. In the supply of water, the regulation of light, and other necessary attributes of perfect dark-rooms, the members of the Camera Club will not possibly have in the future any cause of complaint.

We have enumerated the conveniences and comforts which the new building is destined to confer upon the members of the Camera Club, in order to draw attention to the success which has attended the movement which a few of our contributors first inaugurated some five and a-half years ago; and as we think that some facts in connection with the starting of the Camera Club and its subsequent career, which will show, step by step, its upward rise, may not be devoid of interest, we purpose continuing our remarks thereon in our future issue.

## Negatives and Positives.

THERE is one point which seems to take almost a lifetime for some people to learn, viz., that an unsuitable background will spoil the best portrait. The great tendency with the amateur portraitist is to have a background far too pronounced in character. A blank wall is better than, say, a brick-lined or ivy-clad wall. In backgrounds, simplicity is the greatest and rarest virtue.

It would be interesting to know how the advocates of fuzzy pictures, who say that we all see things with fuzzy edges, explain away the almost universally



known fact that those people who use spectacles, etc., use them because by such aid they see things clearer. If then a long or short sighted person uses glasses in order that he may see nature more clearly, how can it be naturalistic to present to him fuzziified nature when he uses glasses to remove that fuzziness?

A NOVEL use of photography has been brought to notice in America. A camera-shot is taken at each voter in an election, at the moment of his boxing his ballot return. In this way any duplicating by the same person is rendered practically impossible.

It is now about time to hear again of the old gas—or water—inspector burgling trick. It would cost the gas or water company but a mere trifle to supply every householder customer with a good Woodburytype portrait of the only accredited inspector, taken in his inspecting uniform. This would render the impostor's trick, if not impossible, at least hardly worth the risk of attempting.

It is stated that Lord Saville has been appointed a trustee of the National Gallery in place of the late Sir R. Wallace.

The Académie des Beaux-Arts has appointed Prince Czartoriski, of Cracow, to the chair rendered vacant by the death of Sir Richard. The Prince's competitors were Sir P. Cunliffe-Owen and Signor Gaetano Milanesi, of Florence.

AUNT BELINDA wants to know if Bacteriology has anything to do with double backs. She would also like to know if there is any advantage in using a roller-slide in photographing *rinks* (or wrinkles)?

WHEN Mr. Scott's process for photography in natural colours is perfected (*vide* AMATEUR PHOTOGRAPHER, January 2nd), probably he will suddenly find greatness thrust upon him. The question arises, what is to become of the old original "*great Scott*"?

## Letters to the Editor.

### ALBUMS FOR ARISTOTYPE (AND OTHER) PRINTS.

SIR,—May I remark that some two months ago, having a number of Kodaks to be mounted (a kind of work I much objected to), I called on Mr. Werge, of Berners Street, and asked him to get me cardboards cut (with holes) of different shades—say two boards, four holes in each, and so make eight when glued together. Thinner strips of board are first inserted. As a result—although perhaps a trifle more expensive—much time and *foreign* language is economised; for no other mounting is required than simply passing through the ends—left open—the prints.

The boards should not be square, but oblong, for convenience in binding.—Yours faithfully,  
ITINERANT CORKEY.

January 6th, 1891.

SIR,—The letter from your correspondent, Mr. Louis Meldon, published in your last issue, touches a want which I am sure must be widely felt, as, notwithstanding the present rage for matt-surface productions, I am a great admirer of glazed surface Aristotype prints. The difficulty of being unable suitably to preserve them, however, is in my own case such a serious obstacle that, as a matter of fact, I comparatively seldom adopt this beautiful process, which would become a favourite one with me if albums to hold the prints with only their paper backing, such as your correspondent suggests, could be procured. Hoping that some of our enterprising dealers will take the hint, and by

providing what is so much needed give a new impetus to the working of the Aristotype and similar printing processes, I am, yours truly,  
ÆOLUS.

January 3rd, 1891.

SIR,—I was pleased to see Mr. Louis Meldon's suggestion in last week's AMATEUR PHOTOGRAPHER that an album, constructed as a portrait album, should be placed on the market for landscape views. I myself have felt a need for such an album, as the ordinary scrap albums are by no means satisfactory; the views cannot be rearranged, and frequently vary in size, thus making a page of four or more look more or less unsymmetrical.

I suggested this to a manufacturer only this week; but he said he did not think there would be much demand. I feel sure there would, and perhaps some manufacturer may intimate through your columns his intention of taking them up.

With the new thick Celerotype paper, mounting would be unnecessary, and a lot of bother saved.

Awaiting its advent, I am, yours, etc.,

NOMAD.

January 3rd, 1891.

\* \* \* \*

### HAND-CAMERAS AT THE VENTNOR EXHIBITION.

SIR,—Having practised photography for about thirty-five years, as an amateur, and taking great interest in the approaching exhibition here, I venture to ask your permission to suggest to manufacturers that they should make a special show of hand-cameras. The time is at hand when photographers will have to decide what field apparatus they will get in readiness for the ensuing spring campaign. I am sure that many an amateur would go in for a hand-camera if he could see a few instruments as examples and compare their merits together. Our journey between this and London is not an easy one, and we have not time, when in town, to visit the show-rooms of several makers.—Yours obediently,  
JOHN G. LIVESAY.

Ventnor, January 3rd, 1891.

\* \* \* \*

### PHOTOGRAPHIC TONALITY.

SIR,—I have read with much interest the article by Mr. Buck in your last issue. To my mind, one great essential of good picture making is a proper gradation in the view itself, which, being very often exaggerated by the lens, requires a development that will *tone down* this exaggeration instead of adding to it. The very morning before reading the article referred to I was at work upon a negative taken by a friend, and which had been developed by the old method. The subject consisted of a striking and somewhat dark foreground, viz., a bold bluff, overlooking a bay, with chalk cliffs in the distance. The latter, as well as the sky and sea, were far too dense by the time the foreground was fit for printing. By just reversing the system of development, and giving only just enough exposure, I succeeded in taking a transparency, and from that another negative, in which the gradations are much more correct, and a better print will result. But how much simpler to have done this in the first instance. I now put down many failures in the past to wrong instructions in this matter. The best subjects are usually those in which there is a wide range of gradation. As I have already said, why seek to ruin this by the old practice of plenty of pyro and alkali by degrees? Rather use very little of the reducer at first, plenty of alkali, and when details are out, add pyro till density is sufficient. But of course you must not greatly over-expose, and many well-known authorities agree that only really first-class results are got where the exposure is just sufficient.—Yours, etc.,

January 3rd, 1891.

ISIS.

\* \* \* \*

### LIVERPOOL EXHIBITION.

SIR,—In reply to "A Possible Exhibitor." Rule 10 will be strictly enforced. The Edinburgh pictures are admissible as a trade exhibit, but not for competition, *except* in the Champion Class (for medalled pictures).—Yours, etc.,

January 6th, 1891.

THOS. S. MAYNE (Hon. Sec.)

—\*—\*—\*—

Shade and Co.—Mr. Fred. Knole, 12, Hyde Vale, Greenwich, advises us that there is still a vacancy for a member in this Postal Club.



## Studies in Art for Photographers.

BY REV. F. C. LAMBERT, M.A.

### INTRODUCTORY.

THE love of the beautiful seems to be an instinct more or less universal in mankind, although what constitutes beauty in the eyes of one man (or race) often has no charm for others. Few of the many who "like what they like" seldom stop to ask (much less answer) the question, why do they prefer this to that? Now, although the "why and wherefore" of our likes and dislikes involve us in problems many and intricate, often enough terribly baffling too, yet any information which throws even a dim light upon these matters cannot fail to interest those who take a real pleasure in looking upon beautiful things.

The love of "pretty pictures" is a landmark in the childhood of us all, and as children we know not and care not why they are "pretty." But presently, when the time comes, as it does to nearly all children, for us to try to make pictures, then we wonder why we cannot make them as readily as we can call up the wish to do so. A thousand things conspire to lead us away from picture making; but still there remains the old capacity for taking pleasure in looking at pictures.

Again, the calling of one who makes pictures, we presently learn, is one requiring a long, long round of drawing schools, studios, and academies; and at the end of all that, only a very slim chance of "making it pay." Thus for the most part, the ninety and nine have gone their several ways, saying "picture making is not for me."

Here and there one whose love for pictures was perhaps stronger than his love for cricket or football would cheerfully point pencils and "learn to draw a straight line" only very soon to learn that that hobgoblin was as needless as it was out of the reach of human hands. Then came a period of "shading from the east" with much misguided and unprofitable labour, interspersed with the making of bread pills for the stippling department—all tending to final disgust, until "one fine day," lo! a magic box catches the sun's rays and puts them on paper. In a moment we see all the delicacy of curve and fold exactly caught with a precision which outstrips in its exactness the very badness of our hitherto profitless toil, and with this comes back the old longing to *make pictures*.

Modern photography has put into our hands one of the most wonderful powers that the mind can conceive. Of this there can be no question. But there *is* a question of the utmost importance which stares in the face everyone who possesses a camera, viz., how can this magic instrument be used to the best advantage?

The power of delineating form, which is given us by this magic instrument, is, like all great powers, one which requires and deserves the very greatest care in its employment. The evidences of its misuse, abuse, or thoughtless use are abundantly familiar to us all. Nor is the reason for this unsatisfactory state of affairs far to seek. With the majority there has been little or no opportunity of *studying* pictorial art. Nay, further, with many it is a subject which they think requires no study, and, therefore, they set to work under the impression that as "the camera does all the drawing," all they need do is to take any and every object or landscape indiscriminately, and the result is entirely a question of luck as to whether it turns out a satisfactory picture or the reverse. Presently a very disagreeable feeling creeps up which compels the question, "Why are so many of my shots failures, and why are so many of Studymore's such nice pictures? How does he do it? We have the same camera, lens, plates, and go to the same

place. I don't like to copy his pictures, but I certainly should like to know how he makes pictures, where I make failures."

To any such enquirer I make bold to say, that without professing to show him how to attain success, yet I can, in the words of a master, point him to the road which has been trodden by those who have plodded on to success.

Professor Ruskin says, "Painting, with all its technicalities, difficulties, and peculiar ends, is nothing but a noble and expressive language, invaluable as the vehicle of thought." Also, in another pregnant passage, he says, "Painting and sculpture, no less than language or than reasoning, have grammar and method—they permit a recognisable distinction between scholarship and ignorance, and enforce a constant distinction between right and wrong."

The bearings of these observations or quotations, I may say with Cap'n Cuttle, "lays in the application of 'em." And the special points to be noticed at the outset are—(1) That art is a *language* for the expression of thought; (2) That the art language has a *grammar* and *method*. The first step, then, for the explorer in art-land is to learn something of art language, in order that he may hold converse with the inhabitants of that land.

It is the study and application of the grammar of art that is proposed in this course of articles.

At the outset, however, we hear distant murmurings against anything like rules in art. It is the old story retold again and again (*sic*).

STUDENS: "Why should I be at the trouble of learning all these rules and canons when all great artists break them constantly? Answer me that, Prof. Lex.

PROF. LEX. Firstly, I would remind you that those you denominate as *great* have attained their greatness by following these despised rules. *When you become great* you may break them, not before.

STUDENS. But why call it a *law* when it is not of universal application?

PROF. LEX. Why talk of the law of gravitation when every beat of your heart lifts the current of life blood upwards instead of downwards, and every daisy that lifts its face towards the sun and away from the earth, breaks your so-called law of gravity?

STUDENS. The cases are different. One law supersedes another. The sun's light is stronger than gravity—on the daisy, for instance.

PROF. LEX. And why may not this be so in art life? A law is but a concentrated expression of the general agreement of a certain set of similar phenomena. A law *explains* nothing. The law of gravity no more explains gravity than it explains why the architecture of ice crystals is more beautiful than, say, the architecture of Fleet Street or the Strand.

Laws of art procedure are a concentrated essence of the wisdom and experience of those who painted beautiful pictures and cut beautiful statuary, etc. They are for us the hedge-rows which somewhat limit our wanderings to the right and left. As we travel along the broad road, Dame Nature indulgently allows us to stray into the adjoining meadows now and again, through a gate or a gap, but he who would be wise in his generation, who wishes to penetrate into the very heart of the longed-for art-land, will not spend too much time peeping through every gap in the hedge. Experience will show him that time is *not always* saved by making short cuts 'cross country, over hedge and ditch. It is not unlikely that these detours may land him in a bed of nettles, or a holly bush bristling with pin points. The main road is surely wide enough for us all, and it is only he who is top heavy with a burden of enthusiastic



eccentricity, greater than his experience or strength can carry, who will reel to and fro. But says the ready-made genius, "Law was made for slaves," to which one may well reply, hedges, high and prickly, were made for incorrigible vagrants—and cattle. The average pedestrian has no objection to the "quick-set," because he finds room enough and to spare between that on the right and on the left. He who keeps the law knows no law.

Well, then, the road which leads us into art-land is broad, wide enough for us all without jostling or treading upon each other's toes. There are hedges on either side, with finger posts to guide and help the traveller. The road branches here and there, so that there is offered us a choice of courses. These in turn bifurcate and ramify; when we get further and further into the untrodden district, it becomes needful for each one to pick his own way slowly, cautiously, and surely.

How then may we, who have but little time at most to spare, best set about learning the language of art? The old way of learning language was to spend all the elasticity of youth grinding away at rules and exceptions, and exceptions to these exceptions, and so on *ad infinitum* and also *ad nauseam*. So much time was consumed in laying the cloth that we got no dinner; we knew nothing of the language except a lifeless grammatical skeleton. Experience has shown that it is more expedient to modify the older processes. Nor is there any apparent reason why we should not profit by the experience of others, and modify our course of art-language study. What is herein proposed is somewhat as follows:—

(1) To quickly and briefly run through the outline rules, or rather to explain the meanings of common terms used in art composition, to get some outline ideas as to the names and uses of the various devices in picture making.

(2) To turn to the pages of our standard authors, and see what words and phrases they use in their art-language; *i.e.*, to examine a number of well-known pictures in our public galleries (National Gallery, South Kensington, etc.); to take these pictures to pieces, and see, as far as we can, the plan and method followed in building them up.

(3) To gather up the various strings of our mental notes made by the way. To try and form some general idea as to the various effects and results obtained by the several users of the different devices.

But throughout the whole course always keeping one eye open, that we may be storing up hints and experiences for camera work.

It may be as well to anticipate one time-honoured but threadbare objection, *viz.*, that the analysis of a work of beauty destroys its beauty. This dogma has always been to me a complete puzzle, so utterly opposed is it to personal experience and reasoning. When I examine a daisy, for instance, and find it a colony of florets each in itself a little system of great beauty; when I cut sections of its petals, its cells, and tissues, each further revelation is an addition—not a subtraction. Again, sunlight decomposed by a prism into a band of melting tints cedes nothing of its beauty because we learn that there are wave-lengths, vibrations, interference, dispersion, etc. To see a beautiful sunset, and know that some of the gorgeous tints are in part due to carbon in the air—London fog, may be—does not prevent my enjoying its beauty. This enjoyment of its beauty may not, perhaps, depend on that or other knowledge, but certainly that knowledge in no way takes aught away, but rather adds a mental pleasure to the enjoyment.

In short, it seems that one may enjoy things in two ways. As a cat loves the fireside and knows naught of carbon dioxide, nor cares for potential energy, or "heat as mode of molecular motion," so a man may enjoy the beautiful form

and tint of a rose-bud, and know nothing of its embryonic form, care naught that its colour is due to a form of chlorophyll, that there is purpose in its structure, and that its petals, stamens, etc., are only modified leaves, etc.; but this further knowledge only adds to his pleasure in satisfying, in part at least, that instinct or craving which is not the most contemptible of his innate qualities, *viz.*, a desire to know the plan and purpose of the world, of which he is a part. It is often said that art is wholly sensuous; but falsely so said. With many the sensuous is the only side sought or seen, but true art, like true poetry, has within it something which not only satisfies the senses, but also the diviner part of man, *viz.*, his mind.

(To be continued.)

## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER X.

THE SENSITIVE PLATE UPON WHICH THE IMAGE IS TO BE IMPRESSED BY LIGHT.

*Material Used as a Support. (Continued.)*

*Miscellaneous Supports.*—In 1855 Scott-Archer, the inventor of the collodion process, patented a method of coating glass with a layer of colourless gutta-percha. This was then coated with collodion, and a negative produced in the usual way. Another layer of gutta-percha was then poured on top of the dried collodion, and, finally, the whole was stripped from the glass. Thus the layer of collodion which contained the developed picture was enclosed between two (waterproof) layers of clear transparent material. Archer's object in devising this method was to save the cost and weight of the quantity of plate-glass otherwise needed. This method was not a success—commercially, at any rate—but it doubtless suggested ideas to later workers.

We often hear, in the past, of a "tissue" as forming a "support." The term was first applied by M. Leon Warnerke in 1869 to a material which he placed on the market in 1875. It consisted of "nine consecutive coatings" of collodion and india-rubber applied to the surface of very fine tissue-paper (whence the name). The transparent film thus formed could be "detached with the greatest ease" from the paper, which (like the glass in Scott-Archer's method) was used only as a temporary support.

In 1871 M. Warnerke invented a roller-slide to carry his "tissue," and he brought out improved forms of each in 1885; but, from the cost and other considerations, these did not achieve a commercial success.

The "Froedmann Film" (so named from its inventor, a Dublin chemist) was brought out by M. Vergara, in 1887, as a better thing than the "transparent paper" of Woodbury which had been previously sold as the "Vergara Film." The "Vergara Film, No. 2" consisted of gelatine which had been rendered insoluble by mixing with it some bichromate of potash, and then exposing it to sunlight. The bichromate gave a yellow hue to the gelatine; but this was removed by soaking in sulphurous acid. It was found, however, that the film yellowed again with time, and its manufacture was discontinued in 1889.

*The Two Principal "Supports" now in Use.*—For practical purposes we may say that only two materials are now used as "supports" for the sensitive salts of silver employed in producing photographic negatives. These two materials are glass and celluloid.



Of celluloid there are two varieties—(1) *Cut celluloid*, thick enough to hold itself out as a flat surface when held in the hand, and which is used in dark-slides exactly like glass plates; (2) *Rollable celluloid*, so thin that it is as limp as a bit of thin silk, and can be wound upon a spool or roller.

Which of these forms of "support" to adopt, is one of the great questions in practical instantaneous photography. With either glass plates or cut celluloid we use dark-slides at the back of the camera to contain them. The rollable celluloid is, of course, used in a roll-holder.

*Glass for Home Use; Celluloid for the Tourist.*—The heading of this paragraph expresses briefly our present convictions as to the "support" to be employed. When working within easy reach of a dark-room and a developing-room, we consider glass plates to afford the best results.

But if we were travelling, climbing Hecla's volcanic pile, hunting for the Burman tied to the stake, stalking the wild elephant in Ceylon, or emulating our regretted friend Donkin's feats in the frosty Caucasus—then commend us to the light and unbreakable celluloid.

There is something very pleasant in the rigidity of glass which renders its manipulation easy when developing.

Cut films of stout celluloid may advantageously replace glass in the case of long walks, where weight is an object, even near home. But test your celluloid films carefully before relying on them for an important series of negatives. The manufacture of coated celluloid films is as yet in its infancy; and, although wonderful progress has been made, and some makers appear to have even mastered all the new difficulties presented by the new material, yet every new batch should be carefully tested before reliance is placed upon it. *Spots* of various sizes and forms constitute the most common defect of celluloid films; but streaks and lines are also not uncommon. In the small sizes we find the stout films to lie as well as glass plates on the rabbit of the dark slides; but it is better to place a sheet of thin cardboard behind each film in order to take off the pressure of the spring which is usually attached to the partition of the dark slide, and which may cause the celluloid film (if unprotected) to bulge out in the middle.

The thin or "rollable" celluloid film is a wonderful production, and is the "tourist's support" *par excellence*. It is much better, however, when—as is usually the case *en tour*—a long series of negatives is to be taken, and the whole roll used before developing any individual negative. Each time that a piece is cut out of the roll—in order that a single negative may be developed—a portion of the roll is wasted in attaching it afresh to the spool or roller. If it be required to develop some single negative in a hurry, it is, again, not an easy task to select the right one out of the forty or fifty exposures which may have been made upon the long, continuous band of material.

On the whole, we strongly recommend the average worker in photography to use *both* glass and celluloid. Have a roll-holder fitted to the back of your camera; but do not discard your dark-slides. Use glass plates (or cut celluloid film) for work at or near home. Employ the roll-holder when travelling. We frequently carry both dark-slides and roll-holder; keeping the latter as a reserve force in case of need. Who is there who has not lost good subjects "for fear that the plates would not hold out?" With a reserve band of celluloid, sufficient for scores of exposures, in our knapsack, we feel safe on this score. And let it be remembered that the element of *chance* enters so largely into instantaneous photography—at least as compared with ordinary tripod work—that (other things being equal) the successes bear some proportion to the number of exposures made. When a "hand-camera man" comes across a really good

thing in his line, he will do well to make two, if not three, exposures upon it. For this reason he ought to carry a larger reserve of material than the "tripod man" needs to do.

(To be continued.)

## Photographic References.

BY MAJOR J. FORTUNÉ NOTT.

### FOCUSSING.

(Continued from page 436, vol. vii.)

It must be thoroughly recognised by the beginner when first he commences taking photographs that he can make or mar his picture at the very outset by the way in which he focusses. It is therefore necessary to give the matter careful study, and not to be satisfied until he feels he has done the best with the subject that his capabilities will permit. So as to be assured upon this head, the following points should claim his attention, in the sequence given herewith, which is the order into which the various circumstances in connection with the matter naturally fall.

First the size of the principal objects in the field of view, or the scope to be embraced by the picture. The regulation of this matter is decided by moving the camera. The nearer it is brought to the central object the larger will be the image thrown upon the ground-glass screen, while the field of view is proportionately diminished; and, of course, the reverse of this holds good—the further it is removed, the smaller become the most prominent features, and a larger extent of view is reflected on the screen. The object of the photograph, and the taste or artistic perceptions of the operator, must guide him in deciding these preliminary matters, but they should not be settled in any happy-go-lucky or careless manner, as, unfortunately, is too often the case with amateur photographers.

The next subject that he should regulate is the one involved in the correct arrangement of the camera so that there is no apparent distortion of the view, and that the horizontal and vertical lines are in correct parallel with the marginal ones. After this very important feature in the composition of the picture has been accomplished, the definite sharpening of the focus over the different planes of the view should be carried out. As before said, a magnifying eyepiece will be found very useful in enabling this to be done in a satisfactory manner, but it is as well to practice focussing without the aid of any instrument, for the eyes of anyone with fairly good sight can soon be trained to distinguish the point at which absolute sharpness has been attained; and to be able to diminish one's photographic impedimenta even by a single article is always worth some little effort. By getting the image fairly sharp, and then racking the lens a turn forward and then a turn backward, the point at which it should be fixed is easily visible, for if the eye fails to detect the absolute focus it readily discerns the points at which the blurring commences, caused by increasing and decreasing the distance between the lens and the screen, therefore midway between these points is the one giving the requisite sharpness. By selecting some object in the centre of the picture in the neighbourhood of the most prominent feature thereof, and getting it sharply focussed with the lens working at its full aperture, an increased sharpness can be given to the distance and to objects on the extreme edges of the plate by diminishing the aperture of the lens, that is by regulating the size of the stops. This want of sharpness in the view that is to be found towards the edges of the plate is due to a defect known as spherical aberration caused by



the curvature of the lens, and may be greater or less in accordance with the make of lens being used. By inserting a small stop it is entirely overcome. There are, however, other considerations to be taken into account, which are of importance when reducing the lens diameter available for use, such as the character of the light, the possible limits of exposure, the nature of the negative it is desired to obtain; and other minor matters also hinge upon the question of the size of stop which should be definitely selected. Some of these points will have to be considered when the subject of optics is reached, but the other matters can only be thoroughly mastered by practical experience.

Wherever it is possible, the view to be photographed should be brought into focus and correctly composed without resorting to the use of the rising front of the camera, or to the horizontal and vertical back swing. The manipulation of these movements of the camera necessitate careful study, for they tend to produce distortion in a more or less pronounced manner, and now and again can create worse evils than those that can be overcome by their use.

The correct employment of the rising front is, however, a much more simple matter, the extent to which it is available within the limits the particular make of camera being used will allow, depending on the covering power of the lens with which the picture is to be taken. The circle that every lens covers has a limit, its area being regulated in the construction of the instrument. It is always advisable, therefore, to employ lenses that cover a larger plate than the one intended for use. If the covering power is limited to the exact size of the plate, and the view is to be taken with the back in the ordinary horizontal position, then the upward movement of the lens cannot be made to a point further away from the base line than a distance equivalent to half the length of the plate. If the camera is one of the old-fashioned kind that has to be bodily turned on to its side when upright pictures are required, then a lens that only exactly covers the plate will not allow any up or down movement of the front whatever. As it is sometimes necessary to work with a lens of this character, an additional reason is apparent for the advice given under the heading of Apparatus, drawing attention to the advantages of the square form of camera with the back frame detachable, so that it can be reversed. For of all the movements a good camera possesses, the rising front is the one most often used, as it enables the photographer to considerably reduce the extent of foreground in his picture, or to bring on to the screen or into correct position within the lines of his view the upper part of buildings, such as the distant spire of a church, or in arranging the position of the sky line—a feature of considerable artistic importance.

If the lens is moved away from the centre, the corners of the picture in the opposite direction are the testing points where the extent of its covering power can be ascertained. If the limit has been exceeded, then these corners will not have any image whatever reflected on them. For instance, if the lens has been carried too far upwards, then the lower part of the picture may suffer, hence the need for careful examination.

In some cameras a horizontal movement of the lens is possible; this change of position is, however, very rarely necessary in the case of cameras with reversing backs, unless two pictures are required on different parts of the same plate. Of course, for the other kind of camera before-mentioned this movement is indispensable, because by changing the position of the camera from the horizontal to the vertical, the horizontal movement of the front becomes the upward movement so often required.

A few patterns of cameras will allow the lens to be

lowered as well as raised. Occasionally, under very exceptional circumstances, this is a convenience in focussing, as, for instance, when the operator is working in an elevated position, and a more extended view is required of objects below.

In all these movements of the lens away from the centre of the plate great care should be exercised to see that unequal illumination does not result therefrom in any degree capable of affecting the negative, for their tendency is to produce such a result.

(To be continued.)

## The Construction and Use of Photographic Lenses.

By CLEMENT J. LEAPER, F.C.S.,

Instructor in Photography, City of Dublin Technical Schools.

HAVING in my previous articles on "Photographic Optics" briefly discussed those portions of that science which concern photographers, I purpose in the present series explaining how lenses are made, used, and tested. Beginning with the description of how optical glass is manufactured, I shall next explain how a lens is made from such glass. After this will follow certain scientific preliminaries, such as the discussion of the various defects to which lenses are subject, and, as a sequence to this, data will be given enabling the chief types of lenses to be constructed. Finally some space will be devoted to the description of simple methods by which the good or bad qualities of a lens can be ascertained.

### CHAPTER I.

#### THE MANUFACTURE OF OPTICAL GLASS.

Glass intended for use in the construction of optical instruments must be homogeneous, colourless, and as transparent as possible, and the object of the manufacturer is to ensure this. Two varieties are in common use, viz., flint and crown.

*Flint glass* is a highly refractive glass containing lead and having a specific gravity of about 4, and the following is the recipe said to be followed by a large manufacturer of it:—

White sand	..	..	..	42.50	per cent.
Minium	..	..	..	43.50	"
Potash	..	..	..	11.70	"
Alumina	..	..	..	1.80	"
Lime	..	..	..	.50	"
Arsenious acid	..	..	..	Traces.	

The crucibles employed to fuse the materials are of best fireclay and capable of holding about 5 cwt. of glass. They are heated in a suitable furnace with the best quality coal as fuel, the furnace being so arranged as to permit the contents of the crucible to be stirred from time to time. This is absolutely necessary, otherwise the melted mass would divide itself into layers of different specific gravities.

The crucible having been heated to redness, a twelfth part of the entire charge is put into it and the succeeding portions added from time to time, the exact interval depending upon the temperature of the furnace. When the entire charge has been introduced, the crucible is closed and the whole strongly heated for about six hours, at the expiration of which the lid is removed, and the stirrer, consisting of a rod of fireclay fixed to one of iron, employed to stir up the molten mass. The crucible is then once more covered and heated for an hour, after which the stirring is repeated. After six or more alternations of repose and vigorous stirring, the crucible is heated to intense whiteness and then permitted to cool very gradually by allowing the furnace



fire to die out. After a week or more, the perfectly cold crucible is removed and broken, and the mass of glass removed.

*Crown glass* is a less refractive variety containing a smaller proportion of lead, and capable of being made from the following recipe, the manufacturing details being analogous to those just described:—

White sand .. .. .	64.8 per cent.
Potassium carbonate .. .. .	28.2 "
Potassium nitrate .. .. .	.9 "
Minium .. .. .	5.8 "
Lime .. .. .	.3 "

The glass having been cut into discs, these are carefully examined and sorted into four qualities, of which the best serves for the lenses of astronomical telescopes, the next for photographic lenses, the third quality for graphoscope and stereoscope lenses, the remainder being remelted with the next charge.

Within the last six years the celebrated firm of Abbé and Schott, of Jena, have made quite a number of kinds of optical glass containing phosphorus, barium, boron, and other substances, and possessing decided advantages over the crown and flint hitherto used, but as the employment of this kind of glass is as yet to a great extent in the experimental stage, I will content myself with describing how lenses may be made of ordinary flint and crown procurable from Chance, of Birmingham, or any of his agents.

In ordering a piece of glass for making a lens, it is well to specify exactly for what purpose it is intended, giving at the same time the data from which the lens is to be made, such as refractive index and dispersion. By so doing the seller will generally be able to select a suitable specimen which must measure at least half an inch more than the diameter of the lens into which it is to be converted.

The following are the chief kinds of glass made by Chance and used in the construction of lenses:—

Name.	Specific Gravity.	Index of Refraction.	Dispersive Power.
No. 1 Crown	2.48	1.50	.039
No. 2 "	2.51	1.52	.040
No. 1 Flint	3.20	1.57	.047
No. 2 "	3.64	1.64	.055
No. 3 "	3.84	1.64	.059

(To be continued.)

## The Stereoscope.—XV.

BY VALENTINE BLANCHARD.

WITHOUT doubt the cheapest and at the same time the most efficient stereoscope to be bought at the present moment is the instrument known all over America as the "Holmes" stereoscope. It has survived the neglect of twenty years, and is now being made in rapidly increasing quantities and imported into this country, where it can be bought at prices varying from one shilling upwards. One cannot help speculating what would have happened if this instrument had made its appearance at the commencement of the stereoscopic mania, instead of its close. I am forcibly reminded of an old rhyme, which evidently goes back at least to the time of Shakespeare—

"If ifs and an's were pots and pans,  
There'd be no work for tinkers."

And yet, though fully recognising the truth of the homely old rhyme, I cannot refrain from the *if*; for surely if Brewster had hit upon this ingenious little machine instead of the clumsy, boxed-up instrument that bears his name, the stereoscope must have had a much longer lease of popularity.

I hope I may be pardoned a little pride in being able to say that I was instrumental in the introduction of this now well-known instrument into England more than twenty years ago.

In the year 1867, whilst engaged in making a series of views of the Isle of Wight, I saw by accident at one of the hotels a stereoscope of an altogether unknown form, and inquired of the proprietor if he knew anything of its history. In answer I learned that it had been left behind—evidently forgotten—by some Americans who had been staying there a short time previously. I was so struck by its simplicity and its unusual capabilities that I made inquiries in various directions to know where it could be obtained, but without result. At length fortune favoured me. I described it to an American gentleman well versed in photography. He smiled a smile, and said, "What! you don't know our 'Holmes,' in this country? Why, it's the invention of our statesman, poet, and amateur photographer, Oliver Wendell Holmes, and is sold all over the States for half a dollar." I told him how much I should like to have one, and he promised when he got back he would send me one. Nearly a year elapsed, and I had almost forgotten all about it when a gentlemanly stranger, in naval attire, asked to see me. He had promised a friend in America to place a parcel in my hands, which on opening I found to contain two specimens of the new instrument. Needless to say how pleased I was. I induced Mr. Meagher to make a copy of it. This he did, and made a stand for it, which was an undoubted improvement. I introduced the American stereoscope and Mr. Meagher's copy of it to the South London Photographic Society in October, 1868, and read a short paper on the special qualifications of the new instrument. A few makers took up its manufacture, but it unfortunately came too late, for the fever was rapidly abating in this country; but it is only right to state that the popularity of the stereoscope in America continued for several years after it was almost forgotten here; and this was without doubt due to the superior efficiency of the "Holmes" stereoscope.

The tall instrument on stand in fig. 14 is drawn from a photograph of one of Meagher's stereoscopes made in 1868, and kindly lent for the purpose of illustration. The one lying down is a copy of the instrument as made at the present time in America, and sent into this country for sale.

Doubtless the American stereoscope, as it is now

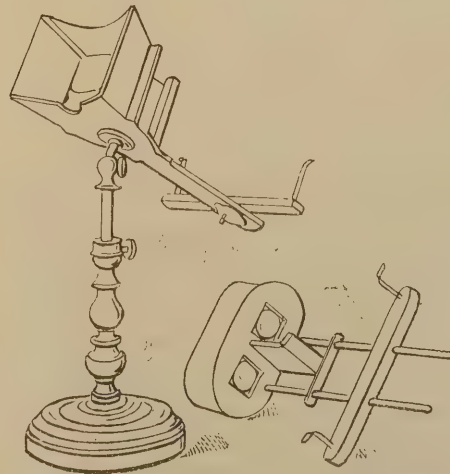


FIG. 14.

called, is gradually getting known in England; but I am sure there are many readers of these chapters to whom it is a perfect stranger, and therefore for their benefit I will point out its special points of excellence. First of all, it will be seen, on reference to the diagram, that the projecting hood completely protects the eyes from any stray light, and so concentrates the attention on the subject to be looked at. The importance of this improvement can only be fully appreciated by those who remember the discomfort experienced



in looking through the old Brewster form of instrument. Another advantage is when the picture is placed in position, it is open to light in every direction, and in consequence there is more light and atmosphere in the picture when looked at in the instrument; and offering therefore a striking contrast to the effect produced in the old box stereoscope, when the picture was frequently only half illuminated. The greatest improvement of all, however, is the great range of focus furnished by the American instrument. I have just measured Meagher's stereoscope, which is an exact copy of the American model, and find that from the eye-piece to the end of the bar on which the cross-pieces holding the subject slides, the distance is 9 ins., whilst from the eye-piece to the end of the central partition it is exactly 3 ins. Now, only the other day a gentleman who had never been able to see through the ordinary stereoscope, in consequence of the shortness of his vision, was enabled, by pushing the picture up to the partition—that is to say, only 3 ins. from the eye-pieces—to see true stereoscopic effect for the first time. Though he had looked at slides without number, he had failed to extract pleasure from their inspection, and had regarded the stereoscope as quite useless to him. It can be imagined by those who see stereoscopic effect without difficulty the pleasure the newly-found power gave to the gentleman in question. This is an extreme case, but often on watching the instrument in various hands, I have noticed a difference of focus varying from 2 ins. to 3 ins. between different beholders.

Having said so much in praise of the Holmes stereoscope, it is only fair to point out its weak point. A reference to the diagram will show that the slide is held in position by wires attached to the cross-piece, and arranged so as to form a groove in which to insert the picture. It is to be remembered that it is a cheap instrument, and therefore it is not fair to expect too much; but still as the wires are continually getting bent and knocked out of position, one cannot help feeling some alteration is needed to make it more efficient. Some arrangement resembling the painters' easel would answer perfectly. It might be a light frame hinged to the cross-bar, and made to fall down when not in use. It is true this would add slightly to the cost, but in America where wood is so cheap, and where every conceivable kind of woodwork is turned out like lightning by machinery, the additional outlay need not be very serious.

Many readers in looking at the diagram may be led to imagine that the instrument is only available for paper slides, and that it is comparatively useless for the exhibition of transparencies. As a matter of fact it is not so, and no difficulty is really experienced. A sheet of white paper placed at an angle of 45 degs. behind the slide will give perfect illumination by daylight, and the same primitive arrangement can be used at night, care being taken to keep the direct light of the reading lamp or gas-burner from the slide, and employ only the reflected light from the white paper. In all cases it will be found that the most harmonious effect will be obtained when reflected light is used instead of direct light. Broadly illuminate the subject, and keep direct light from the eye-piece, and it will be seen that even for transparencies there is no need whatever for a boxed-in instrument.

(To be continued.)



**Photographing a Wreck.**—Who shall say that the Devonshire photographers are not enthusiastic? Two of them set off recently to photograph the large steamer *Nepaul*, which lay wrecked on the rocks at the entrance to Plymouth Sound. So busy were they under the focussing cloth, that they did not notice the advancing tide, until the crags on which they stood were cut off by the rising tide from the mainland. After a few hours' detention they were rescued a passing vessel.

## Our Contemporaries.

*Anthony's Photographic Bulletin*, speaking of "Some Points Often Overlooked in Toning," says, "Natural scenery contains a far greater number of brown and grey tints than any others; hence black and bluish landscapes appear cold and unnatural. To obtain the best results with landscape prints, and to obtain brown tones, requires much more skill and practice than is generally supposed. If the toning bath is too strong, or too warm, it will work rapidly, and instead of getting the red colour of slowly deposited gold, the blue variety is obtained. On the other hand, if the bath is weak, or too cold, the process is slow and tiresome, and the prints deteriorate upon the surface from long exposure to the action of the chemicals. All things considered, a bath of gold chloride with sodium acetate is the best to use. But a difficulty often arises in obtaining the best results, which is probably due to the character of the sodium acetate used. . . . When we remember how minute a quantity of organic substance will affect gold chloride, we are constrained to believe that many of the troubles of the acetate gold bath may be caused by the traces of tarry impurities in the sodium acetate. To overcome these difficulties it is best to use fused sodium acetate in the toning bath, and any difficulties that might possibly arise from the presence of tar are eliminated, because the tar compounds are volatilised by the heat of fusion of the salt. When the fused salt is added to the toning bath it is only necessary to use two-thirds of the weight called for by the formula, since, by fusion, the salt loses about forty per cent. of water of crystallisation. The fusion of the acetate is a very simple matter; all that is needed is a clean porcelain dish that can be heated upon a fire or over a blue gas flame, taking care to begin the heating slowly, and allow the dish to cool slowly, otherwise fracture is inevitable." Other articles are: "Diazotype," "The Joint Annual Exhibition," "New Method of Preparing Engravings for the Lantern," "Note on the Report of the Lens Standard Committee," "On the Control in the Density of Negatives," etc.

The *Beacon* (Chicago) gives the following method of intensification recommended by Dr. Stolze:—"After the negative has been well washed, but hardened by alum, etc., it is immersed for about a minute in a four per cent. solution of potassium bichromate, and dried in the dark. It is then exposed to light through the back for a few minutes, thoroughly washed and dried again. It is then immersed in a solution of India ink, or other suitable colouring matter, which will, of course, penetrate the swelled portions of gelatine, the amount of colour absorbed being in proportion to the swelling, which is, of course, dependent on the extent to which the bichromate has acted." Other articles are: "Zapon," "A Big Photograph," "The Acid Fixing Bath," "Primuline," "A New Application of the Dusting-on Process," etc.

The *American Journal of Photography* gives the following:—"Dr. Schobrens projected, before the Antwerp section of the Belgian Photographic Association, a series of stereoscopic views with the aid of two lanterns placed in juxtaposition. Each lantern received the half of a stereoscopic view and a coloured glass, red for the view on the right, for example, and green for the view on the left. The two views being superposed in the screen, it sufficed to look at them through a pair of spectacles having red and green glasses (in this case red for the right eye, and green for the left eye), to perceive the non-coloured image with as much relief as in the stereoscope. This effect is produced because each eye only sees one image, as in the ordinary stereoscope." Other articles are: "A New Substitute for Glass and Films," "The Veress Experiments," "Use of Colour Screen with Plain Plates," "A Notable Discovery," etc.

The *St. Louis and Canadian Photographer*, speaking on the subject of "Photography," says, "It is to be regretted that photography has sometimes fallen into unworthy hands. It has been used for low and vulgar purposes, and all right-minded men should unite in condemning the low creatures who so pollute it. If all will unite in this warfare, there will be enough to occupy the minds and pens of writers without condescending to personal attacks because of differences in opinion on subjects not essential to photography's advancement. Whether we write in language strong and severe, or in a lighter vein, let it all tend to the one desirable end." Other articles are: "Aristo versus Albumen Paper," "Art Matters," "Lighting and Expression," "The Silver Bath," "The Gundlach Shutter," "Stereoscopic Work for Amateurs," etc.



*Wilson's Photographic Magazine*, referring to the "Osmium Toning Bath," says, "This toning salt consists essentially of ammonium-osmium chloride and acetic acid, and is fit for use on simple solution in water. On immersing in the bath a washed-out silver print, it first assumes a brown tinge, after which the half-lights tone a deep azure blue. Aristo paper tones deep blue-black when acted on sufficiently long, which gives a very beautiful effect, considerably superior to that of platinum prints. The prints ought not to be washed out between toning and fixing. Formula:—

Osmium ammonium chloride	..	..	23	gr.
Osmiate of potash	..	..	1½	"
Acetic acid	..	..	½	oz.
Water	..	..	36	"

Osmium is one of the rarer metals of the platinum group, and is worth from 35 dols. to 40 dols. per ounce." Other articles are: "Why is it Necessary to Rock the Dish during Development?" "To Remove Yellow Fog from the Negative," "Development of Over-exposed Films," "A New Departure in Washing and Fixing Negatives," etc.

The *Practical Photographer* says, "It is a mistake to imagine that every portrait is improved by vignetting, and it would be a good thing for the art value of portraits if the prices for vignettes were the same in all cases as for plain portraits. A vignette can never be a *picture*, for it lacks all the charm of careful composition. Of course, the vulgar and the thoughtless part of the public choose the vignette because the photographer charges rather more for it than for the plain picture; but photographers who have any ability should stand out against this tendency, which, to a great extent, places them on the level of inferior men." Other articles are: "How our Leaders Work," "Pleasure and Profit on Lake Superior," "Combination," "Practical Work," etc.

The *Photographic Times* (New York), talking of "The Social Side of It," says, "If you are going to travel, and are at all socially inclined, by all means get and take with you a hand-camera. It will pay you over and over again in the pleasant acquaintances you will make, and will give you also a set of views which, in after years, will serve to carry you again and again over your tour, reviving and refreshing your memory, and enabling you to live over again your vacation while sitting in your chair at home with the can't-get-aways. The exchange of pictures with the friends you make while en route renews the interest, revives pleasant and perhaps slumbering memories, and helps to fill the album, which should always be kept of every vacation tour." Other articles are: "Industrial Photography," "The Chemistry of Fixing," "The Moselle," etc.

*Engineering* for January 2nd, in an article on "The Utilization of Niagara," contains excellent reproductions of photographs of the Falls and neighbourhood; they are, "The Rapids Above the Falls," "The Rapids Below the Falls," "The Horseshoe Falls," and "The Rock of Ages."

## Apparatus.

### PLATT'S "SIMPLEX" REPEATING FLASH-LAMP.

MR. E. G. PLATT, of the Birkbeck Works, Birkbeck Road, Ridley Road, Kingsland, N., has forwarded us a specimen of his repeating flash-lamp, which we had an opportunity of trying this week, and found that with a single lens, working at  $f/10$ , and a rapid plate, showing 25 degs. Warnerke, a well exposed negative was obtained with a single flash. The arrangement of the burners is such that complete combustion of the magnesium powder is obtained, and, at the nomi-

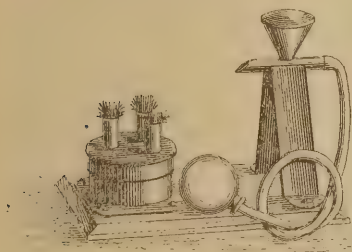
nal price of 3s., many an amateur desirous of turning out portraits on these dull days will make a good investment in one or more of these lamps.

## Exhibitions.

### THE EDINBURGH PHOTOGRAPHIC EXHIBITION.

(By our Edinburgh Correspondent.)

Now that the awards in the Edinburgh Photographic Exhibition have been published, it is possible to take notice of the Exhibition in a way that could not be done while it was still in an incomplete state. In the first place, as to the time at which the awards have been published—more than six weeks after the Exhibition was opened—it is explained that owing to the great number of exhibits, and their high standard of merit, the jurors required to devote four days instead of one, as originally contemplated, to the work of adjudication. That is one reason. Another is that the pictures in the various classes were so scattered about the Exhibition, that the work of adjudication was greatly retarded by the amount of walking to and fro which was required. As to the awards themselves, it may be said that, generally, they give satisfaction. There are, however, exhibitors who are disposed to grumble, which is natural. Speaking generally, what strikes one even at the first is that all the prominent pictures, with the exception of those in Class V.—Portraits above 12 by 10, in sets of six—which were of necessity prominent, have been passed over, and the awards have been given to pictures which, so far as the public are concerned, are comparatively obscure. The reason for that is the old one of retouching. As many exhibitors will doubtless be disappointed by the decision of the jurors upon that question, it is necessary, in their interest, to look into the conditions of the Exhibition as set forth in the prospectus. There is no condition in that document which either allows or forbids retouching, and the names of the jurors were not announced till the catalogue came out, a day or two after the Exhibition was opened. Exhibitors, therefore, had no direct guidance as to whether it would be allowed or not. They were thrown back upon their own reading of the prospectus, and were obliged to search in it for a constructive pronouncement upon the subject. Turning to it, it is found that the first paragraph states that "the object of the Exhibition is to direct attention to the development in recent years of photography, and to stimulate further advances by encouraging artistic skill and invention." The third paragraph says, "In addition to the ordinary character of photographic exhibits, etc." In the 7th, 9th, 12th, 14th, 15th, and 17th paragraphs the word "pictures" is used to describe photographs, and the word "photograph" is not once used in the whole prospectus. Further, the 16th paragraph contains the provision that "in Classes XII., XIII., and XIV. the work must be entirely and solely that of the exhibitor." Now, two interpretations of this prospectus are quite feasible. Those who say that retouching is excluded by it may point to the first paragraph, which says that it is the development "of photography" to which attention is sought to be directed, and that inasmuch as retouched pictures are "photographs and something more," they certainly could not be included. To those who have exhibited retouched pictures it is open to say that while the first paragraph is the only one which points to their exclusion, all the other provisions of the prospectus are in their favour. For instance, "the ordinary character of photographic exhibits" is mentioned, and it is notorious that retouching is one of the most ordinary characteristics of photographic exhibits. Then the persistent use of the word "picture," in preference to "photograph" may be held to point to an intention to allow retouching, because the manifest purpose of retouching is to convert what would be merely a photograph into a picture. Further, what is to be said of the provision in the three amateur classes, that "the work must be entirely and solely that of the exhibitor"? What work is an amateur likely to get done for him if it is not retouching? Framing, it may be answered; but though, as a matter of fact, it is elsewhere provided that all pictures must be framed, it is not to be presumed the amateurs were to be excluded from purchasing their frames as they purchased their mounts, and therefore a quite natural supposition would be that it was retouching which was forbidden. I do not say that any or all of these provisions allow retouching, but simply that within the phraseology of the prospectus a good case can be made out for those who sent in retouched pictures. But this leads to the further consideration that retouching was not disallowed in all the classes. No one can look for a moment at Mr. Marshall Wane's series of six portraits above 12 by 10 ins.,





in Class V., for which the bronze medal has been awarded, without seeing that retouching has been carried to an extraordinary extent upon them. If it was allowed in Class V., why has it been disallowed among the enlargements in Class XX? This class was probably the largest in point of numbers in the exhibition. Certainly it was the best display of all. In it the jurors have not yet awarded a first prize, though they have selected a large photograph for the silver medal, which the Council will award if a satisfactory negative (a condition of the competition) is sent on. This photograph, one of a series of platinotypes, by Mr. Worsley Benison, of Chepstow, is by no means a pleasing picture, being hard and unfeeling in tone, but apart from that the jurors certainly went out of their way in making it their choice. If the exhibitor had not complied with the necessary condition of forwarding a negative, they should have walked past the exhibit and given the award to another who had sent a negative. They awarded the second prize to Mr. T. G. Whaithe, Carlisle, for the bromide which, in your issue of December 19th, I selected for condemnation because of its tone and unsatisfactory shading, which led to indistinctness and want of contrast. The decision of the jurors is in all respects superior to mine, but I cannot understand why, when retouching was allowed in Class V., it should in Class XX. exclude the very fine work of, say, Mr. Ayton or Mr. Moffat, of Edinburgh, whose carbon enlargements have been most favourably noticed in all the photographic journals, not to speak of many other exhibitors whose work, whether it be retouched or not, is excellent. This is a point for the jurors to clear up. They were, undoubtedly, left to themselves upon the question of retouching, and had they acted consistently their decision would not have been questioned, but they seem to have acted inconsistently in their decisions with reference to the above two classes, which is unaccountable when the time they took to arrive at their conclusions is taken into account. Their awards are, however, final.

With regard to their decisions in other classes, it may be said that in Class I., Mr. Richard Keene, of Derby, gets the silver medal for six landscapes in platinotype, which are well selected and very softly, in some cases rather too softly, printed. In Class II., F. Boissonnas, of Geneva, gets the first place for a most beautiful silver print from an orthochromatic plate, of a richly flowery dell. The printing is clear to the smallest detail, the composition is excellent, and the photograph is altogether one of the most pleasing in the Exhibition. Mr. H. P. Robinson also gets a silver medal in this class for his "Selecting Flies," a whole-plate platinotype very lightly printed, and which is looked upon here as not his best photograph. In Class III., Mr. John Moffat, Edinburgh, is first with a very fine frame of fourteen portraits, half and three-quarter plate in platinotype. Messrs. Window and Grove, London, get the silver medal in Class IV., for six platinotype portraits in which the figures are very softly printed, but the backgrounds are intentionally left indistinct, to the great delight, doubtless, of the naturalistic school. Mr. Crooke, Edinburgh, is first in Class V. with his magnificent set of portraits in platinotype of Scotch judges and leading citizens, in which his great faculty for handling the shadows is so well exemplified. In Class VI., J. H. Hogg, Kendal, is silver medallist with a three-quarter length portrait of a lady, very delicately printed in platinotype. Class VII.—Combination Printing—was a very small class, and the work sent forward was not of sufficient quality to merit an award. In Class VIII., Lyd. Sawyer, of Newcastle, gets the silver medal for an "At Home" portrait-group in platinotype which is very clearly printed, but rather stiff in composition. Mr. Charles Reid, of Wishaw, is silver medallist in Class IX.—Instantaneous—for his unequalled groups of animals, printed half-plate size in silver. In Class X.—Architecture—Mr. Wm. Mitchell, Dalkeith, is first with six exceedingly well-lighted interiors, wonderfully free from halation, and clearly printed in platinotype. In Class XI. no first prize is given, but three bronze medals are awarded, one to Mr. Andrew Pringle, for a series of photo-micrographs in bromide, of bacilli, etc.; another to Dr. Piazza Smyth, Edinburgh, for two large bromides which show the invisible lines of the spectrum; and another to Mr. Gambier Bolton, London, for his series of animal studies in carbon, which are so much admired. J. H. Forbes, Edinburgh, is first in Class XIII. with a delicate print in platinotype of a Swiss scene. In Class XIV., J. G. Patterson, Eskbank, is first with several softly-printed and well-selected views in Derbyshire,

printed in Blanchard's platinum. In Class XV.—Prize Pictures—the exhibits were of such equal merit that the jurors felt it would have been invidious to have made an award. In Class XVI.—Lantern Slides—G. W. Wilson and Co., Aberdeen, though closely run by others, get first place for a very fine set of six artistically selected views. In Class XVII.—Reproductions—the Autotype Company, London, are first. Four silver medals are awarded in Class XIX. for photo-mechanical prints. One goes to the Autotype Company, London, for a large autogravure portrait in engraving black; another to Mr. Walter L. Colls, London, for a series of nine small intaglio reproductions in black and sepia tones; another to Mr. Jas. C. H. Balmain, Edinburgh, for three photo-engravings, firmly printed in dark tone; and another to W. J. Annan and Sons, Glasgow, for a photogravure reproduction of portraits by Raeburn. In this class all the awards are certainly well merited. Class XX.—Enlargements—is dealt with above. In Class XXI.—Apparatus—silver medals have been given to three exhibitors. Mr. J. M. Turnbull, Edinburgh, shows the most original apparatus, his stand containing his hand-camera, film slides and carriers, and walking-stick tripod. The camera is fitted with a rapid rectilinear lens to work time or instantaneous, with graduating focussing arrangement, and is suitable for hand or stand work, one of the most complete and at the same time plainest and most moderately priced hand-cameras in the market. His walking-stick tripod is the leading article of the kind. It is made of telescope tubing, each leg consisting of an outer tube with two smaller inside, which, when drawn out, give the required height, and besides, the six points of contact with the top, which is a desideratum in all tripods, and which gives to this all the rigidity of an ordinary stand. The most ingenious part of the stand is the making of each leg sectionally in the form of a third of a circle, which enables the whole, when folded up, to be put into a circular case.

G. Mason and Co., Glasgow, make a large show of excellent apparatus, and have obtained a medal for their collection, in which is an automatic studio stand, a neat-looking article which works easily; a Scovill camera (24 by 20), and a patent burnisher. The burnisher, which is their best exhibit, has an arrangement at the side by which the roller is adjusted to suit the thickness of the mount. They also show a series of cameras of their own manufacture, in all the ordinary sizes, and which look in all respects exceedingly serviceable. Mr. W. Wray, London, is the other medallist, his exhibit, of course, consisting entirely of the lenses for which he is famous all over the world.

A good estimate is afforded by the awards of the esteem in which the different printing processes are held by gentlemen in the position of jurors. Excluding the classes in which the printing was compulsorily by a certain method, there are forty awards, of which twenty-two are for prints in platinotype, other six are for photographs platinum toned, and one is for a photograph in Blanchard's platinum, making twenty-nine in one form or other of platinum printing. Of the other eleven, there are two first and three second prizes for silver prints; one first and three second for bromides, and two second for carbon prints. These figures show the decadence of the silver print, and also the bromide prints are not considered equal to platinotype, and they point future exhibitors clearly to the conclusion that if they wish to succeed they must print in platinotype.

Last week was a busy week in the Exhibition, which was, towards the end of the week, quite thronged with visitors. From Tuesday onwards, too, there were nightly exhibitions of lantern slides. Tuesday night was occupied by Mr. Blanc's lecture on "The Architecture of Normandy and Brittany," which was postponed from the previous Friday evening on account of a gas cylinder being found to be empty. The lecture was a very instructive one, and the slides, mostly prepared from photographs by Mr. Blanc himself, were excellent, but the lantern was very awkwardly handled. Surely the Edinburgh Photographic Society could command a better apparatus than a single lantern. On Wednesday night Mr. Mitchell showed the slides which are on exhibition. On Thursday night Mr. Thomas Barclay, the Secretary, showed a series of slides illustrating the scenery amid which the leading events of English history have been enacted. On Friday night the Rev. Robert Paul, Dollar, gave a series of slides of great merit illustrating the passage of the St. Bernard Pass in winter; and on Saturday night Mr. Wm. Hume, Lothian Street, Edinburgh, exhibited a series of views of Perthshire scenery. In the latter half of the week I am glad to be able to say the lantern was well handled.



## Notes from the Liverpool Centre.

(By our District Editor.)

I REGRET to announce the somewhat sudden death of Mr. Francis Faltin, one of the most genial and painstaking members of the Liverpool Society. At his burial on New Year's Day, Mr. Paul Lange, Mr. T. S. Mayne, Mr. E. M. Tunstall, and other local amateur photographers attended. Mr. W. P. Christian, owing to ill-health, has been ordered abroad, and will be away for some months. He is a most enthusiastic worker in photography, very clever; and one of the leaders of the Liverpool Society.

On Thursday, the 15th of this month, Mr. Geo. E. Thompson, President of the Birkenhead Society, is to give a soirée in the new hall of the Y.M.C.A.

At the Walton Society on Wednesday last, the programme of business included the discussion of "Methods of Intensification and Reduction."

Messrs. Archer and Sons, of this city, have several novelties in lanterns and their working. Through their kindness the "Terpuoscope" was manipulated at the Liverpool rooms a few nights ago, the instrument giving complete satisfaction.

The main feature of this new lantern is that the views are changed by means of an automatic registering slide-carrier and rolling-curtain effect, worked by a rack-and-pinion adjustment. Messrs. Archer also have a very ingenious new dissolver for single lanterns, the pictures on the screen being dissolved without changing and without leaving the hitherto dark cloud. I shall have something further to say of these novelties next week.

At a meeting of the 1891 Exhibition Committee this week, important details in connection with the catalogue, tickets, etc., were decided upon. Season tickets will be 7s. 6d. each; members' tickets, 2s. 6d. each; single admission, 1s. per day.

## Societies' Meetings.

**Dukinfield.**—The monthly meeting of members was held on Monday, the 29th of December, when a good number of members and friends had the pleasure of viewing the *Photography* prize lantern slides, 1890.

**Jersey.**—The society is to be congratulated on a very good and interesting show of about 500 of its works at their rooms in Grove Place. Criticism in this branch of art is a very difficult task, the photographic and artistic views being often diametrically opposed—the suppression of detail, too seldom deemed obtrusive in the former case, too indiscriminately in the latter. In strong effects suppression of minutiae often gives force, whereas detail of texture, etc., are often the very things which give an interest of antiquity, marking the ravages of time and weather. The exhibition is divided into five classes. In the landscape division the silver medal of the society is awarded to Colonel Jackson, for his admirable series of views taken during the summer excursions. This gentleman was also awarded the first prize for the best landscape—a very brilliant little cottage piece, in which the sunshine is admirably expressed. There is a similar one of his in another part of the room with a plain sky, which leads us to suppose the clouds were added—an instance of good judgment, as this addition seems to be the key of its strong effect. Mr. J. Andrews has a very artistic series of small views; in a frame of six, the lower three were especially good. "A Misty Morning" has artistic merit, and in a less degree "Gravelotte Village," but this latter was somewhat damaged by the arrangement of figures. We next notice a water mill, "Greve de Lecq," also a well-managed view of the difficult subject of Gorey Castle, with a dark shadow, perhaps too dark in the foreground. Mr. G. Michel, C de Rue, is very good, and the clear and defined treatment is suited to the special subject. There are also some good interiors placed above it. The section we most admired was the enlargements, amongst which stood in first rank "A Jersey Lane" and "Two Peeps at Greve de Lecq." "A Retriever Dog," by Mr. Rogers, was also excellent. "A Yacht," large cutter, "Gateway of Mont Orgueil," "An Indian Interior," and "Old Houses, Dinan" next to it; also "A Cottage, St. Ouen's, Jersey." Passing on again from the enlargements, we come to another cottage at Rozel, a silver print, which we much admired. "A Forest Road" is a goodish composition of trees rather spoilt by a white leaf coming out from the foreground; this might have been removed. Of the instantaneous photographs; the best, perhaps, is "Seeking Shelter," not for competition, but we think that a good sky would have improved it. "A Yacht," to which a special certificate is awarded, is also excellent, as was the "Sarah King" brigantine. "Dinan" was good as a photograph, but had nothing which could not, we should imagine, be done as well by the ordinary process; perhaps if taken from a lower level

a better effect might have been obtained. "St. Malo" had some elements of the picturesque in it, the composition of dark spots breaking the long hard lines so difficult to deal with in photography. Amongst the portraits the prize is obtained by Mrs. Haddon Smith, but perhaps the best portrait was one in the special certificate frame placed next to it. The first prize in each was a *bronze jewel*. The judges first awarded the jewel for landscapes to Colonel Jackson, and the remainder to the President (Captain Lamb), but when the rule "that no member is to win more than one jewel" was pointed out they revised their decision, and the awards now stand as follows:—Landscapes, Colonel Jackson, medal; Mr. Andrews, certificate; Mr. F. Toms, certificate. Instantaneous, Dr. Taylor, medal; Captain Lamb, certificate. Genre, Mrs. Haddon Smith, medal; Captain Lamb, certificate; Major Stuart, highly commended. Enlargements, Captain Lamb, medal. Transparencies, medal withheld; Mr. Messervy, certificate; Captain Lamb, certificate. The exhibition was open to the public for two days, during which time a great number of people visited the large and well-lighted hall, in which the photographs were on view, a special interest being taken in the numerous lantern slides, which were arranged in frames round a table covered with white paper. Messrs. Baker and De Faye showed a large assortment of photographic apparatus. The evening of the last day was occupied by a display of members' lantern slides, on a screen 12 ft. in diameter. Each picture was fully described to a delighted and enthusiastic audience.

**Leith.**—The ninth meeting of the current session of the above association was held on the 30th ult., Mr. W. Dougall, President, in the chair. Dr. Hugh Marshall delivered an exceedingly interesting lecture on the "Platinotype Process," in which he sketched out the history of this method of printing, described by means of chemical symbol on the black board the preparation of the paper, together with the changes which were effected by exposure to light, and the subsequent operation of floating the partly visible image on a hot oxalate of potash bath. The lecturer accompanied each step with an ocular demonstration of the method employed, from the placing of the sensitive paper in contact with the negative to the finishing of the print. The nominations of office bearers for the ensuing session were adjourned to the January meeting.

**Newcastle-on-Tyne and Northern Counties.**—The London Camera Club collection of Mr. Lyddell Sawyer's principal photographic studies, old Newcastle places and faces, river scenes, marine subjects, instantaneous effects, genre studies, etc., are now on view at the Central Exchange Art Gallery, Newcastle-on-Tyne. The annual meeting will be on the 13th inst.

**South London.**—At the meeting on the 2nd inst., the President, Mr. Edwards, in the chair, Mr. Howson gave a demonstration of the new lantern plate brought out by the Ilford Co. He exposed a number of plates behind quarter-plate negatives, four in particular being exposed for 7½, 15, 20, and 25 sec. respectively, at 18 in. from a batswing burner, using the same negative in each case, and developed them altogether. The only difference to be detected was in the time of development, the results being indistinguishable when fixed. In reply to inquiries, Mr. Howson said he strongly recommended hydroquinone for the new as well as for Alpha plates, and considered the former to be about sixteen times as fast as the latter. On January 16th Mr. Warnerke will give a demonstration on "Mechanical Printing as applied to Photography."

**Staff. Potteries.**—A lantern entertainment was given to the inmates of the Haywood Hospital, Burslem, on the 1st inst., by Messrs. Hewitt and Powell (Hon. Secs.), on behalf of the Staff. Potteries Photographic Society. A number of views of local interest were shown, together with some comic slides, and also a set descriptive of a tour in Norway. The entertainment was much enjoyed by the inmates, and another one was promised later in the winter.

**The Photographic Society.**—An ordinary meeting will be held at 50, Great Russell Street, Bloomsbury, W.C., on Tuesday, the 13th inst., at 8 p.m. A paper will be read by Mr. E. H. Maunder, F.R.A.S., on "Photography Applied to Astronomy."

**West London.**—A meeting was held on the 2nd inst., Mr. W. A. Brown, President, in the chair. The first part of the evening was spent in examining an exhibition of apparatus, the work of members. Mr. Rogers showed an apparatus for making lantern slides by reduction, the whole of which, including the dark-slide, being constructed of pine. He also exhibited a tourist's half-plate camera and slides, both the reducing and tourist's camera being constructed by himself. Mr. Winter explained a novel form of walking-stick tripod for hand-cameras, constructed entirely of metal. Mr. C. Whiting exhibited some prints from wet-plate negatives, which had been orthochromatised with erythrosine, also a very convenient revolving cutting-knife for cutting out lantern masks, and a useful developing brush, made of a piece of felt fixed in a wooden handle. The annual exhibition of members' work and conversation will take place on Friday, the 9th, at the Broadway Lecture Hall, Hammersmith. On Saturday, the 10th, there will be an exhibition of the prize slides at 7.30.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the *number and full title of the query* referred to.

## QUERIES.

**4430. Enlarged Copy.**—Will some one please inform me how to proceed to take a cabinet negative from a carte-de-visite portrait?—**RING.**

**4431. Argentotype and Sepiatype Papers.**—Can any of your readers give their experience with these papers, saying what the results are?—**W. R. COORFIELD.**

**4432. Mottled Marks on Negatives.**—Can anyone tell me why I have got, in the sky of many of my negatives, curious mottled markings, looking something like network? I use Ilford ordinary dry plates, and develop with pyro, and have had the plates by me some six or eight months. These marks appear on developing, and seem to come whether the plates are developed immediately after exposure or not.—**PUZZLED.**

**4433. Bromide Prints.**—Having developed a number of bromide prints lately, I have several that are not a good colour. Some are too grey, others a greenish-slaty colour, and a few are too black. Can I improve these in any way which will be worth the trouble? Any information will oblige.—**B. T. F.**

**4434. Copying.**—I want to copy some oil paintings and plates in the *Magazine of Art*, using an Instantograph lens. What stop should I use, what exposure should be given, and what light? I do not want to copy them the same size. Please don't refer me to any books. Any other hints about copying will also be gratefully received by—**NIEPCE.**

**4435. Tripod.**—I am in want of a good rigid tripod. Can any reader of the **AMATEUR PHOTOGRAPHER** recommend me a good one? It must be rigid, cheap, light, strong, and well made. It is for a half-plate camera, price not to exceed 12s.—**NIEPCE.**

**4436. To Make Hand-Camera.**—I want to make a hand-camera, one that can be used on a tripod, if desired. Will someone kindly tell me a good way of changing plates without any risk of scratching the film or double exposure?—**E. W. M.**

**4437. Book on Exposure.**—Will anyone kindly inform me if there is any book treating on exposure in the studio? as I find, in treating different complexions, the same exposure does not do. Also the variation in colour of background for same? If no book, I should be glad of information from my more learned brethren. Thanks in anticipation.—**PORTRAITURE.**

**4438. Camera Making.**—I am about to make a half-plate camera, and should be glad of advice as to what style is best, and whether with conical or parallel bellows? Also what form of double back?—**DEVON.**

**4439. Fixing Prints without Hypo.**—On page 719 of "British Journal Photographic Almanack" Dr. Leisegang recommends chloride of magnesium for this purpose. Has any brother amateur tried it on Leisegang's paper? If so, I shall be glad to know what results he got. Dr. L. states that if any be left in the print after washing it will have no injurious effect; is this so? What quantity should be used in place of hypo in making the combined toning and fixing bath, and what is the price? as I cannot find it mentioned in any drug list I possess.—**THE DOOK SNOOK.**

**4440. Vignette Glasses.**—Could you kindly tell me one of these?—**O. APPLETON.**

**4441. Oil for Lantern.**—What oil is best for use in the lantern? What chemicals should I add to it (and in what proportions) to obtain the best light?—**LYTHE.**

**4442. Toning.**—Why does gold deposit? I use—  
Borax ... .. 90 gr.  
Water ... .. 15 oz.  
Gold ... .. 2 drams.  
and always find gold deposit. With acetate of soda I get no gold deposit. Will someone kindly help—**PERPLEXED.**

**4443. Toning Matt Prints.**—I have been printing on matt paper; but find in washing and toning the print washes off in the first washing, or disappears in the toning solution. I only washed in one water, and toned in the ordinary acetate bath. Ought the prints not to be washed, and should another toning bath be used? Any information your readers will be kind enough to give will be very acceptable to—**J. H.**

## ANSWERS.

**4420. Development.**—An instantaneous photograph taken on an Ilford extra-rapid plate—I presume the red labels meant—should appear on plate within 5 minutes, and the development complete within 20.—**HAMISH.**

**4420. Development.**—From five to ten minutes, if properly exposed.—**W. A. J. CROKE.**

**4421. Mounting Prints.**—Make a paste of common starch, and use this for mounting the prints. It is made easily, and suits very well.—**HAMISH.**

**4421. Mounting Prints.**—You cannot have a better, simpler, or more convenient mountant than starch.—**W. A. J. CROKE.**

**4422. Frost on Negatives.**—Place a cardboard covered with black cloth or velvet outside the window, at an angle of 45 degs. Place the camera inside, use *f/20* stop, and give about 5 secs. exposure.—**MEMNON.**

**4423. Camera Adapters.**—The only objection to these is that, unless the camera is so constructed as to alter the position of the tripod top, the adapter makes the camera extremely unsteady, because the greater weight is not over the centre of gravity of the stand. If this is arranged they act all right.—**ISIS.**

**4424. Bromide Paper and Hydroquinone.**—"Bromide" will find a very good formula in *AM: PHOT*: vol. xi, No. 290, page 291, by Mr. Andrew Pringle. I have just been using it with Eastman's B bromide paper. It produces a fine rich black, while the picture comes out regularly and well under control. The formula for 2 oz. developer is

(A.)				
Quinol	...	...	...	4 gr.
Sulphite soda	...	...	...	12 "
Distilled water	...	...	...	½ oz.

(B.)

Sat. solution of washing soda.  
These can be made up in larger quantities. For use, take A, ½ oz.; B, ½ oz.; and water, 1 oz. I should advise development to be stopped at the right depth by throwing away developer and pouring on *without washing*—

Alum	...	...	...	110 gr.
Citric acid	...	...	...	25 "
Water	...	...	...	5 oz.

This arrests the action at once, and keeps the whites pure, but should not be left on too long, as it has a reducing effect. Eastman's B paper is A1.—**ISIS.**

**4424. Bromide Paper and Hydroquinone.**—I always develop Eastman's bromide paper with hydroquinone, and find it works well. I use the same formula as recommended for the Ilford bromide paper for developing their Ordinary (yellow label) plates. After developing, and previous to washing, I immerse prints for a few minutes in solution of ½ oz. citric acid to 5 oz. water, after which I wash and fix in the ordinary way.—**QUINOL.**

**4424. Bromide Paper and Hydroquinone.**—I have not the least difficulty in getting most excellent prints on Eastman's bromide paper, using a hydroquinone developer. If "Bromide" will send me his address I will give him the formula I use. I do not know who invented it, but it is the best developer I know of, and I have tried many.—**CYPRUS.**

**4425. Reduction.**—If the lens is working with *f/16* stop, the increase of focus would make this much smaller, and the exposure would be about 15 secs.—**MEMNON.**

**4426. Perfect Brand of Paper.**—The brand of this paper is called Perfect. I do not know whether it can be obtained in Leeds or not, but I have no doubt it can. Most dealers stock it. Any tone can be got with this paper, of course, a great deal depending on the negatives.—**HAMISH.**

**4427. Building Amateur Studio.**—If "Hereward the Wake" will forward address, I shall be pleased to give directions; but should like to know height of side walls and to top of roof.—**LADY TORFRIDA.**

**4428. Combined Enlarging and Optical Lantern.**—Hume's Cantilever enlarging apparatus is

without doubt the most perfect and compact lantern in the market. I have lately had the quarter-plate size (5½ in. condensers) adapted so as to show lantern slides, by having a 4 in. condenser made interchangeable with the large one, and the base of the lantern lowered, etc., so as to let the light nearer to the smaller condenser. These alterations have been carried out for me by Mr. John Trotter, 24, Gordon Street, Glasgow, and I would recommend "Mahdi" to communicate with him, as he is a practical optician, and understands photography. This limelight combination will cost only about £10.—**ENLARGEMENT.**

**4429. Transferotype.**—Cannot now be had anywhere.—**MEMNON.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us **BEFORE TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT.**

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**M. EGBERTON.**—(1) No. (2) One of the small brass finders, which can also be converted into a focussing magnifier, attachable either top or side. (3) Place the prints face downwards in a dish, with water at 75 deg. F., leave for ten minutes, and then change the water every ten minutes; take the prints out, and blot off between blotting paper between each change of water.

**DENMARK.**—Shutters, No. 2; plates, No. 4.  
**E. A. YERBURY.**—We place as follows—5, 6, 4, 3, 1, 2.

**GIULIO FAIDA (Venezia).**—The two lines, A and B, are possibly caused by light let in the hinge of the dark-slide, and the marginal fog by the plates being old. Were they colour-sensitive plates? Please let us have a little more details about them.

**H. S. W. R.**—(1) Certainly; the idea is by no means new. (2) Yes, with lens at *f/8*. (3) Yes; wash before putting in acid, but this acid bath is not necessary when using hydro. (4) No.

**E. CLARKE (Smynna).**—We have received your note with list of 19 hand-cameras, and we will write you, as the list is too long to answer here.

**ART STUDENT.**—No. 3 meter is a reliable instrument, when backed up by the experience you have hitherto had, and does not require much study to successfully work. No. 1 or No. 4, rough surface. The loss of the distance is due to the extra density of the distance in the negative. This may be avoided to some extent by exposing longer, or backing the foreground with matt varnish. The ground opal glass should be close to negative, and light central, about 4 in. off. The use of tin reflectors all round would be of great help. When pointing to the sky it is advisable to use ground-glass, no reflectors will be required, the exposure would be much shorter, but more uncertain to calculate. A good medium can be made by dissolving

Dammar	...	...	...	150 gr.
Turpentine	...	...	...	5 oz.
Benzine	...	...	...	5 "
Oil of lavender	...	...	...	50 drops.

When dissolved, rub on the film with the tip of the finger. The prussiate and hypo will reduce well. Hand-camera No. 1 is good. The above is a good matt varnish also, the amount of benzine determining the degree of matt obtained. Always pleased to help you.

**G. E. WILSON.**—S. L. is decidedly preferable to your present instrument, especially for odd work.

**R. S. VICKERMAN.**—Yes; try the bath instead of the one now in use. If this is not effectual, send us a negative, and we will examine the deposit.

**SCOTEMAN.**—We are certainly in favour of No. 1. It is not too light for rigidity, but do not think you will get quite such a long focus as you require. The half-plate racks out to 16 in., the 7½ by 5 to 17 in.

**R. R.**—We should prefer the doublet. It is a reliable instrument, and well worth the price asked. The one we had was an excellent one.

**E. W. MALE.**—(1) A good deal depends upon the weight of the ribbon, but 11½ in., weighing 23 gr., will burn for 30 secs. (2) No; certainly not.

**A. W. BULLEN and J. H. NUNN.**—Let us know, please, whose paper and what method of developing, etc., was pursued. In the meantime we will test print.

**ABOLUS.**—(1) C, (2) F.  
**FRED MERCER.**—The plates named are in "common" use, and give excellent results in the hands of hundreds of workers, and are quite suitable for your purpose.

**J. W. WESTERN.**—(5) Over-exposed and under-developed. (8) Fully-exposed, fogged in developing. (10) Fully-exposed, under-developed. (11) Fully-exposed, fogged in developing. (6) Slightly under-exposed, over-developed. (13) Over-exposed,



fogged in developing. (14) Ditto. (20) Overexposed and under-developed. You are dreadfully at sea in developing, and if you will call next Monday afternoon we shall be pleased to give you a hint or two.

NOVICE.—Use the same developer as given in your note, but measure out the pyro, add the water, and then one drop of your ammonia mixture, flood the plate with this, and after one minute add another drop, then after another minute another drop, and so on till full density is obtained. Let us see results then.

DAVID JAMES.—Most certainly you would get better results.

ANGLE.—We are always much obliged if "Old Subscribers" will "express their views," and in the matter you call attention to we are very much of one mind, and have followed up your suggestion and others upon the same subject.

T. EDWARDS.—You will note that we have extended the time for sending in prints for the "Seven Ages of Man" Competition.

S. ROACH.—Yes, you can enter them, but they will stand no chance. Try and do something better.

ROYAL NAVY (China).—A, an interesting curiosity; B, very fair; C, good; D, a little too black and white; too much restrainer used in developer; E, very fair, considering the paper; F, good, but print slightly flat—you want a little more chlorate of potash in sensitising liquid; G, good; I, good; J, the best so far; K, very good; L and M, both very interesting, the latter the better of the two; N, excellent; your platinos are too flat. Your experience of spotted plates is not new by any means, and generally arises from the varying temperature and dampness. We always keep our failures as danger-posts on the road to success. We will write you shortly.

SPIKE.—The alba-carbon has been used both for lantern-slides and enlarging, but we know of no place where the transformation could be effected. Send a stamped addressed envelope, and we will write you.

## Monthly Competition.

### No. XX.—PORTRAITURE AND FIGURE STUDY.

Title of Photograph.	Name of Sender.
An Everyday Flora ...	E. Winn
The Stirrup Cup ...	P. Sheard
Rose ...	D. Petty
Fishermen Mending their Nets ...	F. G. Smart
Santa Claus ...	A. R. Dresser
Playmates ...	E. J. Appleby
In the Studio ...	W. A. Southwell
An Hospital Patient ...	R. J. Hillier
In the Conservatory—Feeding the Birds ...	Rev. G. E. Hermon
The First Teetotal Ironworker ...	R. W. Copeman
A Home Study ...	F. W. Bidford
Doctor Sophie K. ...	Miss Beatson
The Woodcutters ...	E. P. Vulliamy
Waiting ...	H. M. T. Tudor
Broom-Maker, Bagshot Heath	E. Dellamotte
His Thoughts are Far Away ...	Rev. A. Burnell
A Young Cyclist ...	Miss S. Bird
An Ordinary Labourer ...	R. Heron
Reading ...	F. M. Gurrin
Two Lovely Black Eyes ...	G. W. Macey
Grandpa ...	R. Churchill
Thoughts of an Absent One ...	W. W. Ritchie
Mrs. Jarley's Wax-work Show	J. Seed
Charles ...	J. W. Bailey
Lillie ...	W. Gibson
A Gentleman ...	F. F. Stone
Innocents ...	J. E. Ellam
The Maid was in the Garden	J. Holden
Driven on a Lee Shore ...	E. W. Alabone
Grandpa ...	W. Smith
A Simple Country Maiden ...	A. W. Gottlieb
The Cricketers ...	A. H. Kinsey
By the Wayside ...	D. Forbes
Two Figures and a Dog ...	R. W. Maughan
Malay Fish-Carrier ...	B. A. Lewis
A Portrait of a Lady ...	Miss S. Ballard
Shy ...	H. P. Holmes
The Doctor ...	E. Griffiths
The Sisters ...	H. A. Wickers
Hardanger Costume ...	L. Hyde
Airing the Baby ...	C. Emanuel
Contemplation ...	F. J. Fester
Idle Moments ...	A. J. Golding
Home Portraiture ...	Miss Hardman
W. Robinson, Esq. ...	L. Selly
Heads or Tails ...	S. R. Hallam
A Manx Skipper ...	E. B. Wain
A Welsh Woman ...	E. Turney
The Old Folks at Home	G. H. Potts
Olga ...	J. C. Oliver
Gossip ...	F. H. Sanderson
Rough or Smooth ...	W. M. Gibbon

The Solo ...	J. B. Dumont
Japanese Lady ...	H. L. Hawkesley
Hide and Seek ...	Mrs. E. Culverhouse
Mrs. S. (of S.) ...	F. W. Averill
A Sussex Pensioner ...	F. P. Pritchard
Miss M. A. Lewis ...	A. P. Speakman
Au Revolver ...	Mrs. S. F. Clarke
Blackberrying ...	Miss C. M. A. Cresswell
Our Baby ...	W. S. Setchell
The Invalid and his Pets ...	C. S. Cobb
Study of a Head ...	R. S. Robson
A Study ...	T. J. English
Boat Building ...	D. G. Urquhart
Luna Contadina Romana ...	T. A. S. Scott
Lady Teazle ...	A. C. Hunter
Our Puppy ...	Miss Down
A Portrait ...	A. L. M. Bonn
Mamma's Darlings ...	J. Frazer
Marbles ...	A. James
A Son of the Sea ...	J. W. Eadie
Ladies of the West Cornwall Golf Club ...	F. B. Smith
A Professor of the Royal Academy of Music ...	G. R. Betjemann
Let me Put It on Straight ...	J. H. Thornton
The Hay Party ...	H. L. Bridger
Begging for a Poor Friend ...	B. Jumeaux
Daddy's Coming ...	Mrs. Malcolm
Honble. Mrs. Benyon ...	Mrs. M. Benyon
On the Wye—What does it Weigh? ...	F. Glazebrook
My Sister ...	W. Smedley

## Holidays with the Camera.

THE following is a list of the competitors:—

### CLASS I. (GOLD "NIEPCE" MEDAL).

Austin, John E. (Maidstone), "On the Yorkshire Coast."

### CLASS II. (SILVER "NIEPCE" MEDAL).

No entries.

### CLASS III. (BRONZE "NIEPCE" MEDAL).

Cobb, Cyril S. (Surbiton), "To Corsica and Back."  
Livingstone, John C. (Edinburgh), "Whitby and its Surroundings."

### CLASS IV. (GOLD "AMATEUR PHOTOGRAPHER" MEDAL).

Galletly, Edwin G. (Edinburgh), "In Normandy and Brittany with the Camera."  
Dresser, A. R. (Bexley), "A Trip in Brittany."  
Fraser, J. (Arbroath), "In the Glens Esk and Prosen."  
Naylor, John (Harrowden), "Chester and North Wales."  
Stow, Rev. Fred. W. (Bedale), "A Winter Outing."  
Taylor, J. Kidson (Buxton), "Connemara."  
Harding, Martin J. (Shrewsbury), "Hand-Camera Studies on Conway Sands."

### CLASS V. (SILVER "AMATEUR PHOTOGRAPHER" MEDAL).

Tresilian, Richard S. (Dublin), "Round About Loch Lomond."  
Jeffrey, Edwin H. (Barnes), "A Short Trip in Holland."  
Corder, A. H. C. (Brighton), "Llangollen and Bettws-y-Coed."  
Newland, Surg.-Gen. A. G. E. (Burma), "A Day in the Nizam's Capital, Hyderabad Decan."  
Ferrier-Kerr, H. (Worthing), "Among the Alps."  
Sheard, Percy (Birstall), "Olla Podrida; or, Holiday Wanderings."  
Eadie, John W. (Airdrie), "Holidays with the Camera."  
White, John (Dublin), "Dublin and Surroundings."  
Clarke, S. Francis (Louth), "Eight Days in Yorkshire with a Camera."  
Tims, John (West Ewell), "Rambles Around Hastings."  
Howie, W. L. (Eccles), "To Ober-Ammergau and Back in 1890."  
Fielden, Captain E. J. (Maida Vale), "Littlehampton."  
Jumaux, Dr. B. (Morecambe), "To China and Back."  
Turner, Alfred (Meriston), "Holidays, 1890."

### CLASS VI. (BRONZE "AMATEUR PHOTOGRAPHER" MEDAL).

Sharland, R. W. (Wandsworth), "A Week at Cheddar."  
Shadbolt, Cecil V. (Chislehurst), "Aberfoyle to Loch Tay, by way of the Trossachs."  
Hammond, C. W. (Halstead), "Holiday in Purbeck."  
Parritt, H. William (London), "Three Weeks in North Wales."

Ellis, Henry (Potter's Bar), "In the South of France."  
Malcolm, Mrs. Louisa (Leeds), "Tour in Jersey."  
Whittard, W. H. (Streatham), "Bye-Paths in the Home Counties."  
Allen, Herbert B. (Nottingham), "From the East to the West of Scotland."  
Leeson, Arthur J. (Birmingham), "In North Devon with a Hand-Camera."  
Chamberlain, J. (Tunbridge Wells), "Littlehampton and District."  
Somers-Scott, T. A. (Dorking), "An Autumn Trip to Rome."  
Putland, Edwin E. (Blackheath), "Around Dartmouth and South Devon."  
Pritchard, Fred. P. (West Hampstead), "Llandaff, Bristol, and Arundel."  
Wain, E. B. (Norton-in-the-Moors), "A Week in the Isle of Man."  
Herbert, William (Cardiff), "Glamorganshire."  
Goodwillie, Henry (Dublin), "Unconsidered Trifles."  
Emanuel, Charles (Hyde Park), "Concarneau, a Photographer's Paradise."  
Davis, T. H. Vere (Brockley), "A Trip to Cornwall."  
Holt, Harry (Liverpool), "Devon, Lake District, Wales, and Yorkshire."  
Longmore, H. A. (Sydenham), "In and About Dunbar with a Hand-Camera."

## Testing and Reporting Department.

	Fee.
1. Testing and Reporting on Lenses ...	2s. 6d.
2. Testing and Reporting on Plates and Bromide Paper ...	2s. 6d.
3. Testing Exposed Plates ...	2s. 6d.
4. Testing Shutters ...	5s. 0d.
5. Testing Coloured Glasses and Media for Lanterns and Dark-Room Windows ...	2s. 6d.
6. Reporting on Apparatus bought through the Sale and Exchange Columns (2½ per cent. on sale price of apparatus minimum) ...	2s. 6d.

NOTE.—In every case a full and ample certificate will be given, particulars of which will be furnished upon application to the

"TESTING DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Quarterly Examinations in Photography.

### QUESTIONS.

1. Give the salient points to be observed when choosing a camera and tripod.
2. How would you choose a lens?
3. What is the best form of instantaneous shutter, and why?

NOTE.—Answers must be received on the morning of the Monday week following the publication of the question—Monday, the 19th inst. All answers to be preceded by the Question, and to be written on one side of the paper only, and endorsed with the full name and address of the competitor. Answers must not exceed 250 words, unless otherwise stated by the examiners. Marks will be given for all answers, and, when possible, the best three will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—  
"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Lantern Slide Exchange.

NOTE.—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

Will exchange any of my lantern slides for three dozen coloured slides of stories.—A. R. Dresser, Bexley Heath.

Beautiful sets "Gabriel Grub" (by Newton), Holy Land, Switzerland, Egypt, Rhine, America, etc., or exchange other good sets.—G. Franklin, Rickmansworth.

Will exchange from a dozen to twenty slides of Devon and Cornish views for others of an interesting character, of animals preferred.—Harris, Wholesale Stationer, Plymouth.

Will exchange 10 slides of Durham for 10 of English or Scotch Lake District.—Walton, Beechwood Street, Sunderland.



## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent., the minimum being one shilling, upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 6d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," 151 numbers, from 170 to 327, seven missing, also seven odd numbers; for cash, or good selection stereoscopic slides.—E. D., 20, Pepys Road South, New Cross, London.

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, Nos. 260 to 325; "Photography," Nos. 35 to 111, not sold; will accept first reasonable offer.—Holder, 9, Cornwall Terrace, Charlton, Kent.

**Banjo.**—Banjo, 5 strings, beautifully plated hoops and fittings, inlaid handle, ivory keys, grand tone, in splendid condition, leather case, suit lady or gentleman; cost £5 10s.; price 55s.; approval.—H. Baker, 2, Acree Lane, Brixton, S.W.

**Cameras.**—Fallowfield's Facile, cost £4 4s., in first-rate condition; take £3, or offers.—No. 89, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Cameras, etc.**—Lancaster's half-plate 1889 Instantograph camera and three double backs only, with waterproof case, all in good order; £2 10s.—A. Spiller, Hillside, Hampstead Hill Gardens, N.W.

Lancaster's Instantograph quarter-plate, perfect, 1890 pattern, six double dark-slides and tripod, no lens; what offers?—George Jackson, 9, Barton Avenue, Urmston, Manchester.

**Cameras, Lenses, etc.**—1890 Lancaster's Instantograph camera, slide, tripod, 7 by 5 R.R. lens, new, 67s. 8d.—R. Henry, 2, Hawthorn Villas, Slad Road, Stroud, Glos.

Optimus half-plate set, long extension square camera, and four double backs; two lenses, 7 by 5 Euryscope and wide-angle; tripod, and leather and canvas cases, nearly new, only used a few times; price £12 10s.—M., 28, Mount View Road, Stroud Green, N.

Quarter-plate portrait lens, 8s.; half-plate landscape ditto, unmounted, 3s. 6d.; quarter-plate Pocket camera (by Rouch) and 6 double backs, 50s.; Adams' Ideal hand-camera, new, £5; 8½ by 6½ rapid rectilinear lens, £2.—Franklin, Station Road, Rickmansworth.

**Developing Tents.**—Marion's square shape, complete with table and sink, cost £4 4s., take £2; Rouch's, complete with tripod, take £2.—No. 89, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Hand-Camera.**—Swinden and Earp's quarter hand-camera, perfect, new in August; £5.—Walton, Churchtown, Southport.

**Hand-Cameras, etc.**—No. 3 Kodak, reg. new, bought direct 30th December, loaded with 60 exposures, less six, the only exposures made by it, perfect order; cost £3 7s. 6d.; will take £6 10s. nett.—No. 91, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Lantern.**—Mahogany lantern, 4 in. condensers, four-wick lamp, new; cost £4 10s.; price £3.—Edwards, Telegraphs, Belfast.

**Lenses.**—Ross' half-plate rapid symmetrical lens, with diaphragms, complete; £4; bargain.—Barton, Morriston, Elgin.

Quarter Euryscope, f/8, R.R. lens, as new, 19s. 6d.; 7 by 5 R.R., working at f/3, 21s., with Waterhouse stops.—John Slade, Slad Road, Stroud, Glos.

Vevers' quarter rectilinear, 14s. 6d.; ditto half-plate view lens, 7s. 6d.—T. Hall, Pinfold Lane, Lancaster.

Rapid rectilinear lens, half-plate, guaranteed in very finest order, covers plate well to edges, fine definition, moveable hood, Waterhouse diaphragms; take 27s. 6d.; approval.—C. Thurlow, 23, Gotha Street, Victoria Park.

Whole-plate single landscape lens, Iris diaphragm; 17s. 6d.—Walford, 30, Nutfield Road, East Dulwich.

Optimus 7 by 5 rapid rectilinear lens, f/3, a really fine lens for instantaneous effects, covers plate well and very fine definition; approval; take 37s. 6d.—Graham, 119, Willmott Street, Bethnal Green Junction.

**Lenses, etc.**—Very fine R.R. lens, half-plate burinisher, perfect, 22 whole-plate views of Holy Land.—W. Jones, Enfield House, Uffculme, Devon.

Rapid quarter view lens, f/8, with instantaneous time pneumatic shutter; 10s. 6d.—George, 5, Melita Villas, Victoria Road, Charlton.

**Negatives.**—Box quarter-plate negatives, suitable for lantern slides; will lend them.—James Brynkrug, Towyn, Merioneth.

**Sundries.**—Set of brass fire irons, full size, very pretty pattern, suitable for dining or drawing room, nearly new; cost 15s.; price 8s. 6d.; approval.—A. Henry, 4, West Brixton, S.W.

House, well-built modern 8-roomed, for sale, good neighbourhood, handy rail and bus to City, bath, hot and cold water, also dark-room for amateur photographer, sink, water laid on.—Blackmore, 1, Coulter Road, Hammersmith.

## WANTED.

**Cameras, Lenses, etc.**—Good quarter-plate or 5 by 4 camera, by Meagher, Perken, Son, and Rayment, or equal maker, long extension, square bellows, reversing back, all useful movements (brass-bound preferred), one or more double slides, and 5 by 4 Optimus rapid rectilinear lens, by Perken, Son, and Rayment; approval; no dealers.—Full particulars to No. 90, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Stereoscopic camera, pair of lenses, slide, wanted. Four-wick Ramphengos lamp, Kodak, or offers.—Bewley, North Road, St. Helens.

Wanted to purchase, second-hand cameras, lenses, and photographic sundries, for prompt cash. Immediate attention given to all correspondence.—Amateur Photographic Depot, 71, Oxford Street, Manchester.

Whole-plate camera, slides, R.R. lens, tripod.—Patrickson, 28, Burton Terrace, Dewsbury Road, Leeds.

6½ by 4½ square bellows camera, by Watson (Premier), with three or six slides, Dallmeyer's W.A. and R.R. lenses, complete; exchange with cash to value or sell, Thornton's patent 10 by 8 camera, three slides, all improvements, Ross' 10 by 8 rapid symmetrical, waterproof canvas cases, tripod; cost £25.—Particulars to Walton, Churchtown, Southport.

Half-plate camera, rapid rectilinear lens, tripod case, etc., complete; lowest cash on approval; no dealers.—Mrs. East, Queen Street, Louth, Lincs.

Half or whole plate camera and portrait lens; exchange jewellery or cash.—Heyaside, Oldham.

**Enlarging Lantern.**—Lancaster's enlarging lantern, 5 in. condensers.—Freeman, 100, Dalling Road, Hammersmith.

**Hand-Camera.**—Facile hand-camera, good condition, cheap; approval.—Frederick Firth, Woodsey House, Leeds.

Facile hand-camera (with R.R. lens), or Swinden and Earp, must be perfect, and reasonably cheap.—Geo. Waller, 3, Middlegate Street, Gt. Yarmouth.

**Lenses, etc.**—Set, half or whole plate modern R.R. or other good lens, also half-plate burinisher; approval, and no rubbish.—Hounsoms, 21, Francis Street, Reading.

**Magic Lantern.**—Magic lantern, 3½ in. slides.—Lowest price to S. Kirkham, Court Place, Carlisle.

**Set.**—Second-hand photographic apparatus, complete; state original cost; full details.—Douglas, 69, Blenheim Crescent, W.

**Sundries.**—To amateur photographers. Wanted, set of photographs of Thames scenery from Oxford to London, with right to publish in book of views.—For particulars apply to Farrer and Sons, Booksellers, Reading.

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## NOTICES TO SUBSCRIBERS.

Subscriptions must be prepaid.

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## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LTD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the Amateur Photographer are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or Apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C.

**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.

## SPECIAL COMPETITION, ILLUSTRATING THE

### "SEVEN AGES OF MAN,"

As described in Shakespeare's Play "AS YOU LIKE IT" (Act II, Scene VII.)

FIRST PRIZE	GOLD MEDAL.
SECOND "	SILVER MEDAL.
THIRD "	BRONZE MEDAL.
FOURTH "	CERTIFICATE.

All contributions must be received on or before Saturday, 28th February, 1891, addressed:—"Seven Ages of Man,"

EDITOR:—AMATEUR PHOTOGRAPHER,  
1, Creed Lane, London, E.C.

## "AMATEUR PHOTOGRAPHER" MONTHLY LANTERN SLIDE COMPETITION.

Prizes:

SILVER AND BRONZE MEDAL AND CERTIFICATE.

First Competition.

LANDSCAPE, SEASCAPE, AND RIVER SCENERY .. Last Day.  
Jan. 22nd.

Particulars as to admission, and entry forms, may be had by forwarding stamped directed envelope to

THE EDITOR,

"AMATEUR PHOTOGRAPHER,"  
1, CREED LANE, LONDON, E.C.



# The AMATEUR PHOTOGRAPHER

Telephone N<sup>o</sup> 1645  
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Office: 1, Gress Lane, Ludgate Hill, London, E.C.

VOL. XIII. No. 328.]

FRIDAY, JANUARY 16, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

[Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]

WE would call our readers' attention to the fact that two ladies who are practising photography for a livelihood are sadly hampered by the want of a hand camera. Perhaps some of our friends may be able to assist them.

THERE is a very interesting series of Alpine photographs on view in the Public Art Museum, Bradford, and they are attracting much attention. They consist of sixty-seven views taken by Mr. Alfred Holmes, and of them the *Bradford Observer* says:—

"They are at once a tribute to Mr. Holmes' skill in photography and his powers as a mountaineer. His camera seems to have been taken into all sorts of impracticable-looking places, and the result is a series of excellent photographs, some valuable for the facts of mountain form which they record, and others for the charmingly selected views which they represent. Among the former are large ones of mountain summits and *aiguilles*, as well as many smaller ones, all very clear and precise in the rendering of details. The latter include some charming little pictures, of which the Matterhorn, near Zermatt, is one of the most beautiful and delicate. There are also two or three photographs from our own Cumberland mountains."

THE M'Kinley Tariff Act has had some effect on photographic chemicals imported into the United States. There were reductions made on iodine and potash salts, whilst the duty on mercurials and chromates was increased.

LAST week a meeting of amateurs was held at Ilkeston, when the Ilkeston and District Photographic Society was formed. The first President is Dr. Carroll, and the Hon. Secretary, Mr. W. Shakespeare, jun.

SHORT, very short, exposures are the order of the day, and claims have been made which have astonished practical photographers, but last week a contemporary gravely announces that Mr. Masey, who has recently been devoting himself to photographing fishes, has made exposures of "from one-two-thousandth to the one-three-thousandth part of a second!" We should hardly think so short an exposure was necessary to catch a squid jumping out of the water, or even the undulating fins on the edge of a ray's body. Is it

not possible that a figure or two got added during the travels of the story from Mr. Masey to the columns of our contemporary?

IN answer to numerous correspondents who have written to us on the subject, and in deference to the earnest desire of many of them, we have determined that *noms de plumes* shall be admissible for publication in answers in the Quarterly Examination, though, of course, the full name and address of the competitor must also accompany the answer.

AMATEUR photographers when on their travels must be careful in selecting their views, as military authorities are very touchy about localities under their charge. The latest victim of excessive zeal in this connection is Mr. Davis, chief engineer of the *Benbow*. He was "taking" the Selema Creek, when a sentry advanced, peremptorily ordered him to desist, and demanded the officer's written permit for indulging in his harmless amusement. This not being at hand, Mr. Davis produced his card. At this juncture the field officer of the day came up, and ordered Mr. Davis's arrest. The votary of the camera was thereupon marched off to the guard-house, and, though he was not long detained, he had to pay by some slight inconvenience for his passion for the arts. It does look very much like over anxiety when an officer of one of Her Majesty's vessels is arrested for photographing in part of Her Majesty's possessions.

WE have received from Mr. W. H. Kitchen (Cardiff) a photograph of the ceremony of opening the Clarence Bridge, Cardiff, recently, by H.R.H. the Duke of Clarence. The photograph is an enlargement from a quarter-plate hand-camera negative. The portrait of his Royal Highness is admirable.

MR. A. C. FORSTER, of Eaton Rise, Ealing, sends us the following extract from a book published in 1849, which we have pleasure in giving, as it may be of interest:

"Professor Schoenbein, who invented the gun-cotton, is stated in the *Revue Scientifique et Industrielle* to have to a certain point discovered malleable glass! He renders paper paste (*papier-maché*) transparent by causing it to undergo a certain metamorphosis, which he calls catalytic for want of a more intelligible term. He makes of this new paper, window-panes, vases, bottles, etc., impermeable to water, and which may be dropped on the ground without breaking, and are perfectly transparent."



THE question of electric action in films has been raised on several occasions, and the makings seem now to have been obviated by the manufacturers, but in that connection the experiments of Franz von Dobrzynski, of Vienna, may be of some interest, and lead to some experiments on the subject being made in this country. Speaking of his experiments, Herr von Dobrzynski says :—

“I have for several months been engaged in investigating the photographic action of electro-magnetic waves. The electro-magnetic waves were obtained by the method of Hertz. They acted on dry bromide of silver and gelatine ‘Nys’ plates procured from Geissler in Bonn. The plane of the plates either included the axis of the vibrator, or was at right angles to it. The exposure was three hours. No sensitisation of the plates was made. The development and fixation took place in the ordinary manner by ferric oxalate and hyposulphite. The action was visible after development and fixation by the appearance of alternating bright and dark bands across the direction of vibration of the waves, or by the appearance of dark bands in the direction of the vibration. Both kinds of bands could occasionally be observed together. In many experiments the plates were covered with tinfoil. Portions of the coating of the tinfoil were cut away. The tinfoil did not prevent the formation of bands. This points to the fact that the chemical action which here comes into play is not a primary one. The cross bands suggested stationary vibrations. They might be due to reflexion from the sides of the wooden box, by which the plates were protected from the influence of extraneous rays; but they might also owe their origin to reflexion from the side of the room. The only experiment which could be made with a reflecting metal ball was not in disagreement with this view; the cross bands were now more distinct and regular. If this view is correct, it may be concluded that waves of from 0.6 to 20 centim. are effective

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ON Wednesday last week, the Edinburgh Exhibition was closed, and with, we are sorry to say, a balance on the wrong side of the accounts. This is the more to be regretted as it opened with a most promising prospect, and no doubt would, but for unlooked-for circumstances, have proved all that could have been desired. The bad weather, the railway strike, and a gigantic bazaar held in the town during the run of the Exhibition (securing £15,000) were all against the success of the venture. We must, however, express the hope that the next Edinburgh Exhibition will have good weather, and no strikes or giant bazaars running at the same time, and express our thorough sympathy with the guarantors, who will be called upon to make the accounts balance.

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WE have recently had fitted in our offices, for judging purposes, one of Dyson's opaque screens, and we must say that we have not seen a better or more effective one in the course of our experience, and we would recommend those of our readers who purpose providing themselves with a screen to pay a visit to Mr. Dyson before purchasing.

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MR. W. T. TUCKER, of Herrick Road, Loughborough, writes to us to the effect that there is now room for six members in the Lantern Slide Exchange Club, the conditions of which are that the member must be an amateur photographer, send in one slide per month, and pay a yearly subscription of one shilling. Mr. A. R. Dresser is the hon. critic of the Club.

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WE would draw our readers' attention to the “Wanted” advertisement referring to loan of negatives. The negatives are wanted to make slides for use in connection with a mission. We hope some of our readers will be able and willing to assist.

THE question of an International Exhibition of Photography, to cover all the branches of the art-science, to be held in this country, is one worthy the attention of all amateurs and of professionals also, as in such a complete Exhibition there would be not only specimens of the best amateur work on view, but samples of the best professional work to be obtained in all parts of the world, and not only a collection of apparatus, connected with the first processes, but machinery in work illustrating the various processes of reproduction which can be used in illustrations and so on. That such a complete exposition of the various departments of photography has not yet been seen in this country will be generally admitted, and even those exhibitions abroad which have professed to have a scope almost as wide have not by any means filled the bill. Under these circumstances, and considering how great would be the educational value, not only to photographers but to the public generally, of such an undertaking, it is only reasonable to assume that if an attempt were made to bring it to a practical issue it would be widely and strongly supported, the more so as there could be no rivalry, except to show the best work, amongst the various schools which are now distracting the photographer's view. All these styles and methods would stand on an equal footing, and the public would be able to judge for itself as to their relative merits. This point alone is of considerable weight when urged in favour of a world-wide exhibition, for, after all, the public will be the final judge of the artistic virtues put forward by the disciples of either new or old schools, and on its verdict will rest the future survival or dissolution of any of them. Of course, there are many other points to be brought forward in support of those who favour the idea of an International Exhibition of Photography, and for a clear and moderate statement of the case, we cannot do better than refer our readers to Major J. Fortune Nott's article, in the January number of the *Photographic Quarterly*, on “A Proposed International Exhibition of Photography.” The writer of the article, in conjunction with Mr. Maskell, has worked out the details of the scheme and carried it so far that a small but influential Committee has been formed and has already met on several occasions to discuss the desirability and practicability of holding such an Exhibition, so that we may safely say that the foundation stone of the edifice has been laid, and that now is the time for those who feel an interest in the matter and are prepared to do their best to assist towards its ultimate success, to come forward and strengthen the hands of those gentlemen who have discussed, and to some extent drawn up, the outline of a scheme which should receive the hearty support of photographers all the world over. We recommend the following concluding words of the article to the consideration of all those to whom our remarks appeal:—“Of course, there are difficulties in the way, and so there have been in connection with every enterprise of a similar nature; but there are none that cannot be conquered if the enthusiasm of the vast army of photographers, professional, scientific, and amateur, can be aroused on its behalf. The two principal obstacles to be overcome before such an enterprise can be launched are the securing of a suitable site, and the procuring of a guarantee fund to which subscribers of good standing have signed for an amount ample to protect those who become responsible for the initial outlay. Once these two matters are satisfactorily arranged—and they are by no means insurmountable, or if they were no exhibitions would ever be held—all other arrangements would be comparatively easy; and if this one has for an ulterior object the providing funds by the donation of its profits towards the foundation of a Photographic Institute, we venture to assert that our brethren with the camera will do their utmost to further



the scheme of an International Exhibition of Photography, and in that event its success will be assured."

### THE CAMERA CLUB.

In our leading article in last week's number, under the above heading, we stated that the subject being one of considerable interest in amateur photographic circles, we should supplement in a future issue the remarks therein made. In accordance therewith we now fulfil our promise.

As before stated, the Camera Club is a unique institution in many particulars, and its prosperity and rapid rise in popularity are distinguishing features of its comparatively short career, which give the history of the Club a more extended importance than it might otherwise possess. In the numbers of this journal issued during the months of April, May, and June, 1885, the various suggestions made by some of the leading amateurs of the day regarding the necessity for a club or association devoted to the interests of photographers can be read, and with the light of existing circumstances it is amusing to see the modesty of some of the proposals made regarding the scope and limits to which it should be confined. No writer apparently foresaw prosperity, and all are timid when the question of expense is on the tapis, one gentleman even suggesting that an annual exhibition of photographs would be impossible owing to the expense thereof necessitating a larger outlay than the exhibitors could afford. Other questions were also discussed, and difficulties appeared to spring up like mushrooms; for even the situation of the proposed club was not settled without trouble. A lady entered the field, and accused Mr. W. A. Greene of trying to strangle the Club at its birth by making the suggestion that it should be located in some street on the south side of the Strand, and have three rooms. She also foretold dire disaster if the social question involved in the idea of a Club was allowed to prevail. It is to be hoped that this lady's photographs turn out better than her prophecies, for the Association was established as a club, and was domiciled in three rooms in a street off the Strand, Mr. Greene's suggestions being carried out in every particular, except the one that the street should be on the south side, for Bedford Street, the one ultimately chosen, is situated on the north side. It is only another case accentuating the good quality of the advice contained in the remark that we should never prophesy until we know.

The first meeting of the gentlemen who had agreed to take an interest in the Club, assembled at the offices of this paper on the 20th May, 1885. From the number of letters then read, emanating from well-known amateur photographers who approved of the plan and promised it a cordial support, the establishment of the Club was found to be feasible; a start was therefore given it by the appointment of a working committee and the formation of a guarantee fund by which the preliminary expenses were provided, or rather their recoupment assured.

By circular and other means the gentlemen acting on this committee soon procured applications for membership sufficiently numerous to justify them in securing a local habitation for the Club, and what was more to the purpose, in five or six weeks after their appointment they were able to announce the fact that they had enough of the required capital subscribed to warrant them in ordering the furniture and fitting-up a dark-room in a much more luxurious manner than was originally anticipated. This committee completed its work on the 14th November, 1885, when, under the presidency of Captain Abney, the Camera Club was formally inaugurated and started on its career with a very successful conversazione, at which the rooms were crowded. There were 164 members then on

the roll, and they had supplied a guarantee fund amounting to £500. With this comparatively small following a club that has had an almost phenomenal success was formed upon lines and rules which have been followed with more or less fidelity ever since. And now five years later the Club numbers nearly 700 members, and has a balance at its banker's sufficiently large to justify it in procuring and furnishing a building in a central position wherein every possible requirement of a social club will be supplied, in addition to those which enthusiastic photographers also find indispensable.

For this social and financial success the Club is greatly indebted to the shrewd business capacity characterising the majority of those members who have from time to time served upon its committees, and also perhaps in a greater degree to its Honorary Secretaries and Managers. The Club has required able steering through certain shoals it has encountered, and fortunately when difficulties have arisen it has had reliable pilots. Herein lies one of the principal secrets of its prosperity, and we draw attention to it because it may point to weak spots in other societies or clubs, and a profitable lesson can be acquired by an investigation into the working history of the Camera Club. This Club was made into a joint-stock company soon after its inception, but the original company had not a large enough capital or powers; in consequence it was lately wound up and replaced by another one with articles of association formed expressly to suit its needs.

In its social aspect also may be found certain features that can serve as useful models for other clubs and societies. Amusement and its concomitant result, that desirable good fellowship amongst the members which must of necessity make any club more or less popular, is provided by monthly smoking concerts, for which, so far, a programme has always been provided that has succeeded in filling all the available room which has been at the disposal of the Club. Then the scientific or technical education of the members in photographic matters has been fostered by the encouragement of discussions following the reading of papers on Thursday evenings during the winter months by members and others, upon subjects with which they are especially acquainted. The Club has in this way done a great deal of good, and its proceedings have had a very wide interest, for many men noted in science and art as investigators or masters in certain departments have given the Club at these Thursday meetings the benefit of their experiences. A proof of the advantages accruing from the method adopted by the Club to interest its members in the scientific and artistic branches of photography is found in the fact that several of them are now prominent as leaders in certain sections of photographic work, and are ruling spirits in guiding the advances that have and are still being made in the fascinating art.

Once a year the Club holds a Conference of scientific men in the hall of the Society of Arts, at which anyone interested in photography is welcomed, and most able papers have been read thereat. By exhibitions of members' work, evenings devoted to that enjoyment to be derived from the use of the projecting lantern, and in various other ways, the members are kept entertained during the dull seasons of the year. In the summer-time excursions are arranged to certain picturesque or historical places for photographic purposes, and in this way the members meet each other under circumstances that promote friendliness.

For the Club evidently recognises the fact that it is only by such means that unity of purpose and intent can be secured, and in this unity lies that power for good which the Camera Club possesses. It is to be hoped that it may also shortly recognise the fact that this power can be em-



ployed in a much more extended manner than has hitherto been possible, for it can now hardly be gainsaid that some such central power is a *desideratum* of photographic circles, because by its ruling many of the divided interests and opinions that now prevail upon several subjects of importance to the followers of the art-science would receive definite settlement. In this direction the Camera Club, as representing the largest and most influential body of men interested in photography now existing, could, if it chose, make its power one of paramount importance.

## Letters to the Editor.

### PHOTOGRAPHIC ART TENDENCIES.

SIR,—In replying to Mr. George Bankart's letter in reference to my lecture to the West Kent Amateur Photographic Society, I have nothing to find fault with, unless it be the excessively high opinion that gentleman has formed of my teaching, and which he has so courteously expressed; to this I can only say I meant well, and meant all I said. I have to thank Mr. Bankart, however, for pointing out that I did not say quite enough, or still worse, did not express quite clearly all that I intended. Addressing amateurs on photographic art tendencies, I almost based my text on the recent exhibitions, where the tendency in printing is certainly not to autotype, but to platinotype or bromide. Mr. Bankart will probably smile when I tell him I looked upon autotype work as out of the range of most amateurs. Very possibly I do not know all its advantages, which may, and, as he says so, does no doubt supply the gradation of tones I miss in the platinotype and bromide prints. I must be understood, however, as making a contrast between these and albumen prints only, in range of tones, I looking at these three processes as ordinary to the amateur.

In regard to negatives, I quite agree with Mr. Bankart, for although, as I say, I am no photographer, but an outsider, I have worked the old wet-plate process almost as long as he has done, and endorse every word he has said in its behalf, and have even gone so far sometimes as to remark to an amateur—much to his disgust—that those who have never used collodion know nothing about photography.

Where I was wrong in my lecture—and I now see I was very wrong—was to think for a moment that simplicity of means should necessarily lead to excellence in art. I will therefore, Sir, eat my words, and look no more for too high a standard in these touch-and-go times, allowing that those who have not the *longue haleine* will do little in art. In reference to detail, I must assure Mr. Bankart that I do not like it microscopic, but moderate definition in the foreground planes, as I explained at the Society of Arts, on the 17th ult., at Mr. Davison's lecture (see Journal).—Yours, etc.,

PHILIP H. NEWMAN.

January 6th, 1891.

\* \* \* \*

### MR. GRATSCHEFF.

SIR,—In your issue for Friday, December 19th, a slight error has been made with regard to the office held by Mr. V. Gratscheff in the Imp. Russ. Tech. Society. The presidential chair is filled by His Excellency M. M. Descheroff. Although Mr. Gratscheff obtained many votes for the presidency, his official duties in connection with the Ministry of Ways and Communications deterred him from accepting the same. He is, however, a member of the Council.

As your assertion might lead correspondence into the wrong channel, I beg of you to make the necessary alteration in an early number of your publication.—Yours truly,

C. T. CHESTERMAN.

\* \* \* \*

### PHOTOGRAPHIC TONALITY.

SIR,—Your paper is always eagerly watched for on Thursday night, and I never fail to obtain several hours' enjoyment in reading every word, and there is hardly a page which does not contain some useful and instructive lesson. I was, however, sorely exercised as to the meaning of the article (Jan. 2nd) by Mr.

T. L. Buck under the above title. In the first place, Sir, allow me to inform you that I am not a member of the "Photo-aesthetic-naturalistic-impressionistic-fuzzigraphic Club;" therefore I was obliged to turn to a much-read work for the meaning of the word "tonality," and found (Dr. Emerson's "Naturalistic Photography," p. 26) that "the correct meaning of tone is the amount of light received upon the different planes of an object." Thus, having got hold of what may be the meaning of tonality, I again read the above article, and should be very much obliged if Mr. Buck will give a little help to a seeker after truth in "tonal values."

Of course, I agree entirely with the first two paragraphs; the third made me scratch my head and think; the fourth paragraph, about development, made me light my pipe, put my elbows on the table, and think how much to blame I must have been to work for so long in such a stupid way. On concluding the article, however, I began to doubt the truth and logic of the arguments, and finally ended in a big maze of doubt and dismay. In the second paragraph Mr. Buck says: "I freely admit that we labour under a great disadvantage, so far as regards the ordinary dry-plate, which is not corrected for colour, seeing that it is so much more sensitive to the blue than the red end of the spectrum;" and again, further down, he says that slow development produces a wretched tonality by allowing those parts of the plate "acted upon by the blues and greys to gather a density out of all proportion to their tonal value, and keeps the very parts of the plate least acted on, i.e., by the reds, yellows, etc." from having the energetic accelerating they need, etc. Then he tells us to "cut exposures short" and use a developer with energetic accelerator. Now, Sir, Dr. Emerson: "Develop slowly," and again, "Develop all plates slowly, as the student has far more command over his work."

If, as we must all admit, the blues act more energetically than the reds and yellows, we shall require to give a much longer exposure to the latter to get their true tonal values, yet Mr. Buck says, "Cut exposure short," so as to get true tonal values. And again, short exposure tends to increase of contrast or actually to decrease of gradation, because the lower tones of the subject are unable to impress their image upon the sensitive film, and the resulting pictures are hard and too black and white, no matter what method of development is used, whilst over or full exposure tends to a far softer and more harmonious gradation, when carefully developed.

The letter by "Isis," in your issue of 9th inst., seems to me to be utterly without point so far as his example goes, it only proves that his friend knew absolutely nothing about development, and had got hold of the rule "Develop slowly, adding your accelerator by degrees," and totally disregarded the equally important rule, "Use your brains." The subject given, "a striking and somewhat dark foreground," with a bright distance, is one in which there is an extreme contrast, which is accentuated by the sensitive salt of silver, and therefore a method of development must be adopted which will reduce contrast, and this can only be done by the use of brains in exposure and in development. To take an analogous subject, which may be met with any day just now, viz., a mass of black in the foreground with white snow in the middle and far distance, we have here a subject in which there is infinitely less gradation than in the view mentioned by "Isis," but surely the "use of brains" would tell anyone to give a long exposure so as to obtain detail in the black foreground, and let the high lights or bright distance take care of itself. Now we want to reduce contrast, consequently we reduce the oxidising agent and increase the accelerator as pointed out in your leading notes on snow scenes. I may be wrong, Sir, and I shall be glad to have my errors pointed out by "Isis," or Mr. Buck. Till they convince me, however, that I am wrong, I shall continue to develop slowly and use my brains.—Yours, etc.,

GRADATION.

\* \* \* \*

**Mending Vulcanite or Ebonite Trays.**—These exceedingly handy but somewhat fragile dishes may frequently be made serviceable, when not too badly broken, by the use of Proutt's elastic glue, a stick of which may be purchased at any shoemaker's furnishing shop for one penny. The pieces should be placed together, and the glue applied like sealing-wax over the join outside as well as inside. A knitting needle heated in a gas flame will be found useful in spreading the wax neatly. The writer has in his possession and constant use a tray which was broken five years ago, and which has been mended over and over again in this way.



## The Universal Developer.

### THE ILFORD HYDROQUINONE FORMULA.

THOSE of our readers who have the AMATEUR PHOTOGRAPHER for 1888 and 1889 will find numerous communications about hydroquinone, and also the expression from many a worker that it would be "the developer of the future." The introduction of eikonogen, however, called off to some extent the notice of amateurs from hydroquinone, although many operators and experienced hands still adhered to the latter for lantern work and bromide papers. Many of the disadvantages ascribed to this reducing agent were caused by ignorance of the best method of using it, and also from unsuitable formulæ for its preparation.

To the practical worker who cares but little for experimental and theoretical photography, but looks more to obtaining successful results from every exposure, and artistic prints from his negatives, the simplification of formulæ and reduction of the necessary stock solutions—which, speaking from our own experience, have a great tendency to accumulate—come as a perfect boon. The formula just issued by the Britannia Works Company for their well-known "Ilford" preparations is simplicity itself, and has been worked out in the form of two solutions, as follows:—

No. 1.			
Hydroquinone	..	..	160 grains.
Bromide of potassium	..	..	30 "
Sulphite of soda	..	..	2 oz. (avoir.)
Water, to	..	..	20 "
No. 2.			
Soda hydrate	..	..	100 grains.
Water, to	..	..	20 oz.

The directions for use, too, are extremely simple, and hardly likely to be bungled over by the veriest tyro:—

- For "Ilford" negative plates use equal parts of Nos. 1 and 2.
- For "Ilford" bromide papers, use one part No. 1, one part No. 2, one part water.
- For "Ilford" Alpha paper, use one part No. 1, half a part No. 2, two parts of water.
- For "Ilford" Special lantern plates (for black tones), use equal parts Nos. 1 and 2.
- For "Ilford" Alpha lantern plates (for warm tones), use one part of No. 1, half part No. 2, two parts of water.

We venture to add the following notes on the above which may be taken as applying to all hydroquinone developers.

In the case of over-exposure, it is advisable to add a few drops of a 10 per cent. solution of bromide or a few drops of acetic acid, or for landscape work where over-exposure is suspected, development should be commenced with an old once-used developer, and then when all the details are out, the old developer should be poured off and a fresh unused developer applied. It is very curious that increase of the hydroquinone or increase of the accelerator seems to have but little effect on the final result; though increase of the accelerator or No. 2 solution causes development to be more rapid, and increase of the hydroquinone and lessening of the alkali tends to produce more delicate details in the high lights, and the development is slower and more under control. With many plates a peculiar grey surface fog is apparent when using hydroquinone, especially when using fresh solutions, but this fog almost entirely disappears in the fixing bath and is harmless in printing. On the Continent the use of the acid fixing bath is almost universal after hydroquinone, and its action, which is that of tanning,

hardening, and clearing the film, is certainly beneficial. There is one important point which must not be disregarded, and that is, the colour of the reduced silver image is a grey black, and consequently less non-actinic than the brown deposit caused by pyro.

We have tried the formula as recommended above for the new lantern plates (see AMATEUR PHOTOGRAPHER, December 29, 1890, page 457) and for the bromide paper with excellent results, the image in each case being a pure black, with no tendency to rustiness or blocking up of the shadows. In making the solution of hydroquinone, it is advisable to dissolve the sodium sulphite in the water, and then add the hydroquinone last.

## Reviews.

*The American Annual of Photography* (New York: The Scovil and Adams Co.)

This old friend of photographers is once more to hand, and keeps up its character of being one of the best printed and got up annuals to be purchased. The articles are as numerous and interesting as ever, and there are as usual plenty of illustrations, though it is to be regretted that, with the exception of two, they are all process-block reproductions. The chief article, and the one which will probably excite the most interest, is "Portraits of Daguerre," which is illustrated by no less than eleven different portraits of that great discoverer, one from a daguerreotype by C. R. Reade, now in the possession of Mrs. S. M. Valentine, having never before been published. There are two very good reproductions of photographs of lightning, one giving distinctly the dark lighting about which there has been so much discussion since photography first showed it. Another illustration, a nice piece of composition, shows three children in an old boat which is high and dry on the grass; they have rigged up a mast and sail, and one sits in the stern with a spade for a rudder, while another manages the sail, and the third is fishing over the side. The title of the picture is "Sailing the High Seas Over." The articles range over all the topics connected with photography—from "A Trunk for Photographic Tourists" down to "A Plea for Imperfection." In the latter article Mr. F. H. Wilson says:—

"The brush and the pencil are amiable wanderers, only too vague in our trembling hands. But the camera is an instrument of precision with an inclusive grasp. Its tendency is to give you a lot for your money; and if it is not judiciously repressed, it will make the summer woods look like one bewildering scatterment of detailed leaves, and will reproduce the peachy cheek with the texture of cork and the speckles of the sparrow's breast. It is too powerful for picture-making at its full force, for there must be a little mystery about art; its forte is really, when the perfected lens is focussed mercilessly and stopped down, the scientific diagram, not the artistic picture. Its tremendous truthfulness is exceedingly valuable in its way, but it must be a trifle tempered where some trace of pleasantness as well is desired. Focus is perhaps the main point—this including the abuse of small stops. Many a picture would have been a very pleasing thing to look at—composition, lighting, subject, all good—if the fiend at the photographer's elbow had not suggested an extra turn towards accuracy of the focussing screw, and then slipped the smallest stop into his hand to complete the ruin. The ideal position of the lens is about that where a good hand-camera worker usually carries his—at neither extreme, where there is the maximum of depth, with nothing too sharp at any one plane of the field."

Amongst workers of this country who have contributed articles are Messrs. W. K. Burton, C. H. Bothamley, A. R. Dresser, W. J. Harrison, A. Pringle, and J. Traill Taylor.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER II.

"COMPOSITION is the art of arranging figures or objects, so as to adapt them to any particular subject. In composition four requisites are necessary;—that the story be well told; that it possess a good general form; that it be so arranged as to be capable of receiving a proper effect of light and shade; and that it be susceptible of an agreeable disposition of colour. *The form of a composition is best suggested by the subject or design, as the fitness of the adaptation ought to appear to emanate from the circumstances themselves: hence the variety of compositions.*

The point of time being fixed upon, the action, expression, and incidental circumstances oblige us often to determine on a particular arrangement, that we may be enabled to place the most interesting objects in the most prominent places. Unless our attention be directed to such arrangement in the first instance, we shall often be obliged to put an emphasis on an insignificant object, or throw into repose an interesting point of the action, when we come to consider their relation to a good effect of light and shade.

To secure a good general form in composition, it is necessary that it should be as simple as possible. A confused complicated form may hide the art, but can never invite the attention. Horace, in his Art of Poetry, inculcates the same doctrine, "*Denique sit quod vis, simplex duntaxat et unum.*" Whether this is to be produced by a breadth of light and shade, which is often the case with Rembrandt, even on a most complicated outline, or by the simple arrangement of colour, as we often find in Titian, or by the construction of the group in the first instance, evident in many of Raphael's works, must depend upon the taste of the artist: it is sufficient to direct the younger students to this particular, their minds being generally carried away by notions of variety and contrast.

In giving a few examples of composition, I have confined myself to the four simple and principal forms; not only from their being most palpable, but also from their possessing a decided character, which is at all times desirable. To those who imagine that such rules tend to fetter genius, I shall merely quote Sir Joshua Reynolds, whose works, if properly understood, render all other writings on the subject of painting superfluous,—"*It must, of necessity, be, that even works of genius, like every other effect, as they must have their cause, must likewise have their rules; it cannot be by chance that excellencies are produced with any constancy or any certainty, for this is not the nature of chance; but the rules, by which men of extraordinary parts and such as are called men of genius work, are either such as they discover by their own peculiar observations, or of such a nice texture as not easily to admit being expressed in words; especially as artists are not very frequently skilful in that mode of communicating ideas. Unsubstantial, however, as these rules may seem, and difficult as it may be to convey them in writing, they are still seen and felt in the mind of the artist; and he works from them with as much certainty as if they were embodied, as I may say, upon paper. It is true, these refined principles cannot be always made palpable, like the more gross rules of art; yet it does not follow, but that the mind may be put in such a train that it shall perceive, by a kind of scientific sense, that propriety which words, particularly words of unpractised writers such as we are, can but very feebly suggest.*" *Sixth Discourse.*

To assist in putting the mind in such a train is all that these examples aim at; and to render apparent to the young artist what he will find wrapped up in theoretical disquisition.

The specimens here given merely happened to be in my possession: there are many others that will serve the student, perhaps better, for illustration, which he ought by all means to procure, or make sketches of, as it is only by rendering himself master of the subject, that he can hope to avoid the commonplace effects which swim upon the surface, and, being palpable, are adopted by every one whose judgment cannot carry him into the intricacies of the art.

Concealing the art is one of its greatest beauties; and he best can accomplish that who can discover it under all its disguises. I ought, however, to caution the young artist on this head, not to be too fastidious in trying to conceal what can be obvious only to a small number; for, in endeavouring to render his design more intricate, he may destroy character, simplicity, and breadth; qualities which affect and are appreciated by every one."

Nothing could be more simple, clear, and condensed than the way in which Burnet states his case for composition, its objects and elasticity. This will be found to be characteristic of his writing throughout. He points out that in a pictorial composition (1) the story must be well told, that is, that the artist must have a meaning in his work, and the intention should be evident; (2) that the composition should be arranged in a good general form; and (3) that it should admit of a pleasing effect of light and shade. He adds a fourth necessity which photographers may regard as a negligible quantity, namely, that it be susceptible of agreeable colour.

It is becoming the fashion with those who appear to be deficient in imagination to deride the pictorial representation of a story and to contemptuously call such pictures "literary art." One recent writer has even gone so far as to say that art is lost as soon as it is given any moral or direct didactic aim. A reply to this fallacy is not necessary, or it may be pointed out that if it were true then painters of all ages have been absolutely wrong. It is also sometimes objected that any rules for the arrangement of the forms, and, as it must follow, any selection according to the best accepted arrangement of forms, in a picture must tend to uniformity, mechanical treatment, and a divergence from nature, which should be the inspiration of all art. It is forgotten that these rules are based on the works of the closest of all observers of nature, the great masters of the art of painting—those who are masters of both what is called, for convenience, "high" and "low" art. That there is a similarity in the methods of arrangement—which will be shown further on—in the compositions of the great Italian schools and the Dutch is the greatest proof of their truth to nature, and that there is more in them than those who take a superficial view of art, and object to these quasi-laws, are capable of seeing. The happy quotation from Sir Joshua Reynolds should make it evident that they would have no power to "fetter genius," or, indeed, those who have much lower art qualifications than that much abused word implies. In addition to the last paragraph on concealing the art I should like to quote C. R. Leslie on the same point,—

"The axiom that the most perfect art is that in which the art is most concealed, is directed, I apprehend, against an ostentatious display of the means by which the end is accomplished, and does not imply that we are to be cheated into a belief of the artist having effected his purpose by a happy chance, or by such extraordinary gifts as to have rendered study and pains unnecessary. On the contrary, we always appreciate, and therefore enjoy, a picture the more in proportion as we discover ourselves, or are shown by others, the why and the wherefore of its excellences; and much of the pleasure it gives us depends on the intellectual employment it affords."

Another inducement to the study of this subject is that it



greatly tends to the elimination of chance. It may stimulate the student to read the dictum of Ruskin, "Nothing is more strange in art than the way that chance and materials seem to favour you, *when once you have thoroughly conquered them*. Make yourself quite independent of chance, get your result in spite of it, and from that day forward all things will somehow fall as you would have them."

(To be continued.)

## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 14.)

EXPERIMENT 91.—Place some clear transparent "soda crystals" (washing soda) on a large watch-glass, weigh the glass and its contents, and allow them to remain exposed to air for some time. Do the same thing with some transparent crystals of sodium sulphate. In both cases the crystals will become white and opaque, and on again weighing the watch-glasses and their contents it will be found that there has been a considerable loss of weight, owing to the fact that the salts have given off part or all of their combined water. The soda crystals have changed from  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$  to  $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ , and the sodium sulphate from  $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$  to  $\text{Na}_2\text{SO}_4$ .

Salts which behave in this way, giving off their combined water when merely exposed to the atmosphere, and losing their crystalline form, are said to *effloresce* and to be *efflorescent*.

Salts and other compounds which absorb water from the air when exposed to it are said to be *hygroscopic*, and if they absorb so much water that a liquid is formed, they are said to be *deliquescent*.

EXPERIMENT 92.—Place on separate watch-glasses some caustic soda, caustic potash, calcium chloride, zinc chloride, and potassium carbonate. Weigh them, and expose them to the air for some time. All these compounds will deliquesce, *i.e.*, will absorb so much moisture from the air that a liquid will be formed, and if the watch-glasses are then weighed, they will be found to have increased considerably in weight.

A **BASE** is a substance which interacts with an acid and forms a salt, but the term is commonly restricted to oxides or hydroxides that have the power of neutralising acids, and the free metals are not spoken of as bases. The metal in a salt, however, is frequently called the *basic constituent* or *basic radicle* of the salt.

### WATER.

We have already met with evidence as to the qualitative composition of water. We have obtained from it oxygen and hydrogen by the action of the electric current, and we have produced it by the combustion of hydrogen in oxygen or in air. By no known process can anything besides oxygen and hydrogen be obtained from pure water, and from these elements alone we can form water. It follows that water is a compound of oxygen and hydrogen, and Expt. 26 has shown us that the *volume* of the hydrogen is almost exactly double that of the oxygen.

In order to determine quantitatively the composition of water, we may either ascertain the *volumes* of hydrogen and oxygen which will unite to form a given mass of water, or we may ascertain the *weight* of the oxygen and of the hydrogen contained in a given weight of water. In the first case we are dealing with the *volumetric composition*, and in the second with the *gravimetric composition*.

The volumetric composition is determined by bringing together accurately measured volumes of carefully purified

hydrogen and oxygen, causing them to combine, and then measuring the volume of any gas that is left uncombined. It is found as the result of a large number of experiments that two volumes of hydrogen combine with one volume of oxygen, and if the gases are mixed in any other proportion part of one of them will be left in the free state after combination has taken place.

The gravimetric composition is determined by passing pure and dry hydrogen\* over heated copper oxide (Expt. 49) previously weighed with the greatest accuracy. The water that is formed is condensed and collected in tubes containing pumice stone and phosphorous pentoxide. This collecting apparatus is weighed before and after the experiment, and the increase gives the weight of the water that has been formed. The copper that is left in the hot bulb or tube is allowed to cool, and is weighed; the difference between the weight of the original copper oxide and the weight of the reduced copper is the weight of the oxygen in the water that has been formed. The difference between the weight of the water that has been formed, and the weight of the oxygen in it is obviously the weight of the hydrogen that it contains. Numerous experiments lead to the result that in every 100 parts by weight of water there are 88.89 parts of oxygen and 11.11 parts of hydrogen, or in eighteen parts of water there are sixteen parts of oxygen and two parts of hydrogen. The formula of the compound is  $\text{H}_2\text{O}$ .

Pure water is a tasteless, odourless, neutral liquid, which in small quantities seems to be colourless, but when seen in large masses has a distinct bluish tint. Although liquid at the ordinary temperature, it is readily converted into a solid (ice) at a moderately low temperature, and into a gas (steam) at a moderately high one. The relations of water to heat are, in fact, of considerable practical importance.

If we take a measured volume of warm water and surround it by a freezing mixture, the water gradually cools, and, like all other liquids, as it cools it contracts. It goes on contracting until the temperature has fallen to  $4^\circ\text{C}$ . ( $39.2^\circ\text{F}$ .), and then, unlike any other liquid, though the temperature continues to fall, it ceases to contract, and actually begins to expand, and goes on expanding until the temperature has fallen to  $0^\circ\text{C}$ . ( $32^\circ$ ). At this point, under normal conditions, the water freezes, *i.e.*, passes from the liquid to the solid condition. At the moment of solidification there is a sudden and very considerable expansion, ten volumes of water forming very nearly eleven volumes of ice. This great expansion takes place with enormous force, and is the cause of the bursting of water pipes, etc., during frost. The injury does not take place, as is commonly supposed, during a thaw, but the ice that is formed plugs up the rent that has been made, and it is only when a thaw melts the ice that the mischief is discovered.

From the fact that water contracts when it is heated up to  $4^\circ$  from a lower temperature, or when it is cooled down to  $4^\circ$  from a higher temperature, it follows that a given mass or quantity of water occupies a smaller volume at  $4^\circ$  than at any other temperature, and hence this point is termed the *point of maximum density of water*.

If we take a quantity of ice, and heat it in a suitable vessel, the temperature rises to  $0^\circ$ , and then the ice begins to melt. So long as any ice remains unmelted, and the whole mass is thoroughly stirred, the temperature remains constant at  $0^\circ$ , and all the heat that is supplied simply does the work of converting the solid ice into liquid water without raising its temperature. The heat thus used up is said to become *latent*, and is called a *latent heat of fusion of ice*.

\* The hydrogen is purified by passing it successively through solutions of lead, nitrate silver sulphate, and caustic potash; it is dried by passing it through long tubes containing solid caustic potash and then through tubes containing phosphorous pentoxide.



The quantity of heat required to change a kilogramme of ice at  $0^{\circ}$  into a kilogramme of water at  $0^{\circ}$  is 79 thermal units, or, in other words, would raise the temperature of 79 kilogrammes of water by  $1^{\circ}$ .

As soon as all the ice is melted the temperature of the water gradually rises, and the liquid contracts up to  $4^{\circ}$ , and then expands as the temperature rises, giving off an increasing amount of vapour, until at  $100^{\circ}$  the water enters into ebullition, or, in other words, steam escapes in bubbles from all parts of the liquid. If the steam can escape freely, the temperature of the water and of the steam just above it remains constant until all the water boils away, and the effect of supplying more heat is to make the water boil faster without raising the temperature of either it or the steam. The heat supplied does the work of converting the liquid water at  $100^{\circ}$  into gaseous water, or steam, at  $100^{\circ}$ . It becomes latent, and is called the *latent heat of vaporisation* of water. When the steam condenses back to a liquid, the latent heat of vaporisation is given out again, and since it is very large in amount this explains why scalds from steam are always much more severe than scalds from hot water.

The exact temperature at which water boils depends upon the pressure of the surrounding atmosphere, and is higher the higher the pressure, a difference of 27 mm. in the height of the barometer, making a difference of  $1^{\circ}$  C in the boiling point. Since the pressure at the top of a mountain is lower than that in the valley, it follows that a higher temperature is required to make water boil in the valley than at the top of the mountain.

Certain other conditions also affect the temperature at which ebullition takes place. If the water is in a perfectly clean glass vessel with a smooth internal surface, two or three degrees higher is required than if it is in a metal vessel, or a vessel with a rough surface. If the water is quite free from dissolved gas (if, for instance, it has been heated for some time just below the boiling point, so that the gas has been expelled), and in a clean smooth vessel, regular ebullition does not take place, but the steam is generated in sudden and even explosive bursts, which may become dangerous. It seems that the bubbles of steam will form only on the points of a rough surface, or round small bubbles of gas which may be escaping from the liquid. Regular ebullition is secured by placing in the liquid small pieces of platinum wire or foil, or short pieces of capillary glass tube sealed up at one end. If the nature of the liquid and other circumstances permit, small pieces of filter paper serve the same end. The air absorbed by the surface of the platinum or contained in the capillary tubes, or the rough surface of the filter paper, furnish the necessary nuclei on which the bubbles of steam can form.

(To be continued.)

## Photographic Work for the Winter Months.

By T. PERKINS, M.A.

### CHAPTER II.

#### OUT-DOOR WORK—SCIENTIFIC.

In the last chapter I pointed out certain classes of subjects for artistic photography, for which the winter months are as suitable as, and in some cases more suitable than, those periods of the year when the camera is most frequently seen; but, after all, the number of photographers who are capable of producing artistic work is so small that, as it has

often been said before, the majority of workers would do best if they devoted their energies to the other side of photography, namely, the scientific in some one or more of its branches; and for much work of this kind the winter months are admirably adapted. And foremost among the divisions of scientific photography, I should, on account of its unfailing charm and interest, place architectural work. There can be no doubt that there is much of this remaining to be done, much which ought to be done without delay, for every year, in buildings as in other things,

"The old order changes, giving place to new."

And if we would preserve records of things which exist now, but which will soon exist no longer, no time is to be lost. Negatives should be taken from which permanent prints may, when needed, be made, and when properly mounted and described might be carefully packed in damp-resisting cases, to be deposited in the new Pompeii which, let us hope, may not be simply the dream of a brilliant writer, but may take some practical form before this century has closed.

Now, no doubt, one of the drawbacks of winter from a photographer's point of view is the increased exposure rendered necessary by the weaker light, yet for photographing buildings an increase of the exposure to ten or twelve times its summer duration is no great drawback; sometimes it is a positive advantage. On some occasions, when moving figures have been more than usually troublesome, and it was impossible either to induce them to stand still or to use a shutter, I have put in the smallest stop, giving a long exposure, and allowed the figures to do as they liked. This can be done, of course, much more successfully in winter, when the light allows with  $f/64$  an exposure of fifteen or twenty minutes to be given. The same plan, too, may be adopted if branches of trees are blowing about; but of course wind causes far less motion of trees in winter than in summer, as the leafless branches offer far less resistance to the wind than the heavily-laden boughs of summer.

The absence of foliage, too, often enables us in the winter to get a picture of a building which in summer is almost concealed by trees, or if not actually concealed, so heavily shaded by the leafy branches that much of its beauty cannot be well brought out. No one can have devoted himself much to photographing the country churches of England without finding trees growing in and around the churchyards much in the way, and possibly feeling sometimes inclined to repeat, with application to those who planted them, sundry lines from the thirteenth Ode of Horace's second book. The yews and other funereal evergreens are as troublesome at one season as another, but the elms, which seem in some places to delight to gather round the churchyards, as if to gaze upon the spot where so many trunks of their kindred, cut into coffin planks, are reposing, lose their leaves in winter, and open out a view of the church which it would be impossible to get in the summer. I believe it may be taken for granted that sunshine is necessary for the most successful representation of the exteriors of churches, especially if there is much carving on the walls, for the contrasted light and shade brings the carving out more forcibly, but it is, of course, possible to have the light too brilliant, and the fainter light of a sunny winter's day will often be found just what we need. The lesser altitude, too, of the mid-day sun is also a fact that we may take advantage of; in the summer a picture that for other reasons we must take at noon may be lit too vertically, so that far too heavy shades are caused below some projecting cornice or string-course. The south porch of a church, for instance, will



generally be found to be better lighted in the winter than the summer, for the rays of the sun penetrate further into the recesses, and, reflected from the floor, light up the ceiling of the porch better. The same characteristic of the winter sun is of use in interior photography; for many purposes perhaps we should be inclined to choose a summer day when the light is good but the sun is not actually shining, but cases sometimes arise in which we may be glad to have spots of actual sunlight, provided it is not too strong, to fall on arch or pillar and give greater relief to the picture: the light from a low sun will often be more suitable than the light from a high one. Once again, the presence of snow on the ground outside may be put to good use in photographing a church with a dark wooden roof. How often it happens under ordinary circumstances that it is impossible to get sufficient detail in the roof without utterly over-exposing the walls and pillars. Now the diffused light reflected from a fall of snow outside sufficiently thick to cover the ground penetrates into the dark corners of the roof, and reveals to the eye details probably never so well seen at any other time, and enables the lens to impress them on the plate. In fact, the sheet of snow outside acts much as the sheet of cardboard or linen which we are recommended to use when taking portraits in an ordinary room. This is a fact well worth bearing in mind, and if any have failed to obtain satisfactory detail in the dark roof of some church, although the other parts of their picture have been successful, it would be well for them to take advantage of a fall of snow this winter for another exposure.

There is another style of work which I am sure would be of great use and interest which can only be done in the winter; that is, the production of a series of prints showing the manner of growth and branching of trees. What the bony framework of the skeleton is to the human figure, that the trunk and branches are to trees; what the study of anatomy is to the figure painter, that the study of the forms of the wooden framework of trees is to the landscape painter. It is, indeed, sometimes said that it is not the business of the painter to so paint the landscapes that one who examines them can say, "That is an elm, that is an oak," but this is true only so far as it asserts that the painter must not neglect the effects of mist or distance or lighting in his endeavours to emphasize the fact that this or that tree in the middle distance is of a certain kind. No doubt, as we look at a woodland landscape in nature, the first thought that arises in our mind is not, "These trees are beeches; these, firs." But we enjoy the harmony of colour, the balance of the composition. But if an artist undertakes to represent the scene, unless he is able to paint it entirely on the spot, a thing rendered difficult by light and effect, he is likely to fall into mistakes unless he has some knowledge of the manner in which trees grow. He will possibly combine the colouring of one kind of tree with the form of another, or even may fall into more serious blunders, and, like many of the old masters, draw such trees as not only never existed but by no possibility could ever have existed. It may be said the artist may go out into the woods and study for himself without the intervention or aid of the photographer. True, but yet the photograph will be of use; it represents on a flat surface an exact image of the tree as seen from the point of view where the camera was placed, all the perspective, all the foreshortening being accurately and easily done. The photograph can then be studied at leisure, and in comfort, by the cosy fireside on a winter evening—a much more pleasant process for the artist than sitting down on a winter day and studying the original in the open-air.

And how much may be learnt by studying a good

photograph—first and foremost the angles which the main branches make at different heights from the ground; the tendency which one tree shows to split up at a certain height into a number of large limbs, so that the trunk, as it were, ceases to exist, while in another the trunk runs up to a great height, shooting out branches right or left; then the curious fact will be noticed that as long as no branches are shot out the cross section of the trunk remains about the same, but that as soon as a branch is shot out the area of the cross section of the trunk is diminished, so that the sum of the areas of the cross sections of the trunk and branch just above the fork is about equal to the area of the cross section of the trunk alone below; and how a similar law holds good throughout the whole tree, a law which we see artists often, through ignorance of it, disregarding. Then we shall notice the characteristic way in which the bark of different kinds of trees breaks up. What, for instance, can be more unlike than the bark of the oak, the beech, the sycamore, and the birch? Then, again, a photograph will show how the growth of a tree is modified by its surroundings—the rock that shelters it from certain winds, the presence of other trees around it which tend to check a lateral outgrowth, and to draw the trunks upwards in their search for air and light. In fact, the number of characteristics of the growth which a carefully selected set of photographs will reveal is well-nigh infinite. Here is work sufficient to occupy the photographer, who lives in the midst of woodland scenery, all the still, bright days of many a winter. And such work will be really useful both to himself and others; he may learn much from his own prints, and if he can reproduce and lend them, others may learn much from them too. I can conceive no better form of early study for one taking up the art of drawing woodland subjects from nature than copying in pencil the accurate representation which photography can give of the anatomy of tree forms. Of course, it will be impossible to copy all the finer branches and twigs, but the main branch work may be and should be carefully copied. Photographs of the same trees from the same points of view taken when spring has begun to clothe the branches with leaves, and when full-leaved summer in its glory has come, will be found useful additions to the series.

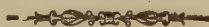
For work such as has just been described, the winter months alone are suitable, but there are other kinds of work for which, if winter is not absolutely necessary, yet it is suitable, and that is for securing geological studies. There probably is no subject on which the general public have such erroneous ideas as rock forms. Stones and rocks are irregular in shape; that is the first observation made, and often the last one too; and from this one observation the general conclusion is drawn that rocks may be of any shape. Look at the paintings of the early Italian masters; whenever they want to represent in their pictures a background of rock or mountain, what monstrosities do we behold—"impossible" rocks, as Ruskin calls them in his "Modern Painters," unless my memory plays me false. The forms of rocks depend on their structure; the soft red sandstone will not form overhanging sea cliffs like the harder crystalline rocks, the granite appears in rounded bosses and blocks, very different from the sharp-edged masses of limestone. The pendant stalactite is found alone in water-worn caves formed of rock whose main constituent is carbonate of lime. The bases of hard cliffs against which the stormy sea hurls, and over which it drags the rounded pebbles, have their angles ground down and polished. The masses of rock in the gorge of a mountain stream are likewise rounded, and sometimes in the valleys which once were filled by glaciers, the bosses of rock are smoothed and planed and scored by the old ice plough which thousands of years ago



moved slowly over the valley bed. Into what errors artists have fallen from ignorance of these laws and causes. How unlike anything in nature are the arched rocks which painters at one time so much delighted in. How incongruous and out of place are many of the rock forms we meet with in conventional landscape. How much the painter may learn from photographs in this respect.

The influence of photography upon artists is, perhaps, greater than many suppose. Compare the work of the modern landscape painter with that of the painter of the classic landscape of former times, and the greater truth and realism and naturalism of the modern artist is at once apparent. This no doubt is partly due to greater love of nature and more reverent study of her beauties, but I think that photography has had something to do with it. Even the much despised topographical photograph has educated the eye of the public, and people are beginning to expect greater truth in the matter of form from the painter and draughtsman, and hence those who can lay no claim to the title of artist themselves, may do good work by educating the eye of the public to appreciate accuracy, and those who have the power of producing technically good negatives and prints, and who live by the seaside, or by the bank of mountain streams, or even by the side of more slowly flowing rivers, may advance the cause of art. The windings of a river, the form of the banks on either side are not mere matters of chance, but depend on the nature of the soil, the speed and volume of the stream; and these characteristics it is peculiarly the function of photography to seize upon and represent with accuracy. Much of such work may, of course, be done in the summer, but many there are who during the summer months will prefer to devote themselves to other branches of the art or science of photography, and these will find not a few days in the winter which allow of some of the useful work above described being done, not only with profit to themselves and others, but with also no small pleasure to themselves. There are, however, not a few days in winter when weather renders all out-door work impossible, but for these dull wintry days photography will supply employment of many kinds, some of which will be described in the next article.

(To be continued.)



## Photo-Micrography.—II.

BY ANDREW PRINGLE.

### MICROSCOPES, AND PHOTO-MICROGRAPHIC APPARATUS.

THE essentials for a "stand" to be used for our work are, mainly, steadiness and accurate fitting of the "adjustments." It is practically essential, further, that the stand be supported on its "feet" in such a way that the tube can be turned to the horizontal position, for the horizontal position of the optical axis of the entire micrographic system is infinitely preferable to the vertical position. There are, perhaps, a few cases where the object, being liquid or in a liquid, must be kept horizontal, but with all my experience I have never yet had to deal with an object that required to be kept horizontal. The apparatus I use, however, is quite fitted for the vertical position, without alteration, if such necessity arises.

There are many microscopes on the market very well suited for ordinary photo-micrography, and some of the stands sold as staple articles by the best opticians may be accepted as equal to the very finest work. For instance, the best model of Messrs. Powell and Lealand, No. 1 or No. 2, is as good as a stand can be, not specially made for

our purpose. I have used with great satisfaction the "Wales" pattern stand of Messrs. Swift, and Mr. Charles Baker's "Nelson" model. Dr. Van Heurck, of Antwerp, who goes into the most critical work with enormous magnifications, swears by a stand of Messrs. Watson, while others who do good work prefer a stand of Mr. Beck's make to all others. The particular model is not so much the point as steadiness and good fitting, especially of the fine adjustment. Moreover, all these opticians sell entire photo-micrographic apparatus, each one fitting a camera to his own favourite stand, and having examined nearly all the apparatus put forward for this purpose, I can say that good work may be done with any of them, the very best work with some.

The essence of a photo-micrographic apparatus is a camera with a plate to receive the image projected by the optical apparatus of the microscope. Until lately the habit has been to adapt a camera to some existing form of microscope, but during this year a "new departure," as a kindly critic at the Royal Microscopical Society termed it, has been made by Messrs. Swift and myself, in creating a microscope for the purpose of photo-micrography. This instrument has for its chief features an unusually long and strong body bearing the tube, and a strong rigid support for the eye-piece end of the tube. The latter I believe to be the prominent and most valuable feature in the design; at all events, by its means we have secured by far the steadiest instrument I have ever seen. I would give a figure of it, but the block would be too large for this page. The price of this instrument is large, but not exorbitant by any means, when we take into account the universality of its motions and the extreme accuracy of its fittings. Mr. Baker has, however, constructed for me an instrument more suited to my means, and embodying the leading ideas of the Swift instrument. I figure this instrument (fig. 1), in the hope that on examining the cut the reader will understand the lines upon which it is made.

It will be observed that here we have the long body and the support for the eye-piece end of the tube.

A perfect instrument, such as the best model of all good opticians, comprises: Coarse and fine tube adjustments, mechanical and rotating stage, coarse and fine adjustment to substage, also rotating (sometimes) and centering (always) motions to substage. I consider it necessary to have a good length of draw-tube, and I like this to be worked with a rack; the use of this will be found when we come to use certain "apochromatic" objectives. The tube of the instrument should be of fairly wide bore, but need not be so wide as to cause inconvenience in adapting eye-pieces to it.

The camera may be of the simplest kind, either wooden or bellows body; but it must have a considerable stretch from front to back, 40 ins. to 60 ins.; 40 ins. will be enough if the ocular is to be used, 60 ins. will be required if otherwise. No "swing-backs" nor rising fronts are needed. The dark-slide must go into position very easily, preferably by a spring catch. A ground-glass is needed, and a piece of plate glass with a few diamond lines on the front face. A focussing glass is set to focus on these lines; the focuser may be a Ramsden or a Zeiss Aplanat, made for the purpose. Some means must be provided for making a light-tight connection between the front of the camera and the ocular end of the microscope. On the front of the camera a metal cylinder may project (like a lens tube without the glasses), a hood of velvet may be passed over this and over the tube; or the cylinder may go inside another slightly larger cylinder on the end of the tube. Inside the camera there should be a flap shutter operated from the outside; by this the exposure is started and stopped.

The base of the whole system is a very heavy plank of



teak, several inches thick, accurately planed and smoothed. Towards one end of this is another solid table turning on a pivot near the centre of gravity. The pivot consists of a strong clamping-screw. On this table the microscope and the illuminating arrangements are firmly clamped down, and the clamping-screw clamps the whole to the base. The camera raised to the proper height is also by itself clamped to the common base, but I like to have a small amount of traversing motion for the rear end of the camera. This is obtained by a clamping-screw and a slot. The front of the camera bearing the projecting hood has a few inches of motion backward and forward.

In order to manipulate the fine adjustment when we are beyond arm's reach of the fine adjustment screw, several means are used. The device known as Hooke's joint is affected by some, but on the whole I prefer a pulley passing round the milled head and stretched over two other pulleys, one of which is operated by a rigid rod fitting the axle of the pulley by a square fitting. This is difficult to describe,

one line; plate parallel with object and perpendicular to optical axis; centre of field projected on centre of plate.

To find and fix true position for the whole system: Place the camera in the central position, which should be marked or fixed by a stop. Place an objective (say 1 in.) in the tube, a condenser with a small aperture in the substage, the light as nearly in position as possible by guess. Focus the pinhole aperture in the condenser, centre the same by the centering screws. Get an image of the light on the field by moving the light about; focus, and centre (by moving it) this image of the light. (If an oil lamp is used, turn the flame edge to the condenser. There will then be a streak of light down the centre of the field.) Once more focus the pinhole aperture, push the turntable to its central position, project the image upon the camera ground-glass, the centre of which must be marked; move the microscope till the image of the aperture falls exactly on the centre of the ground-glass. Now project the image of the flame (by focussing it) on the ground-glass, and by moving the

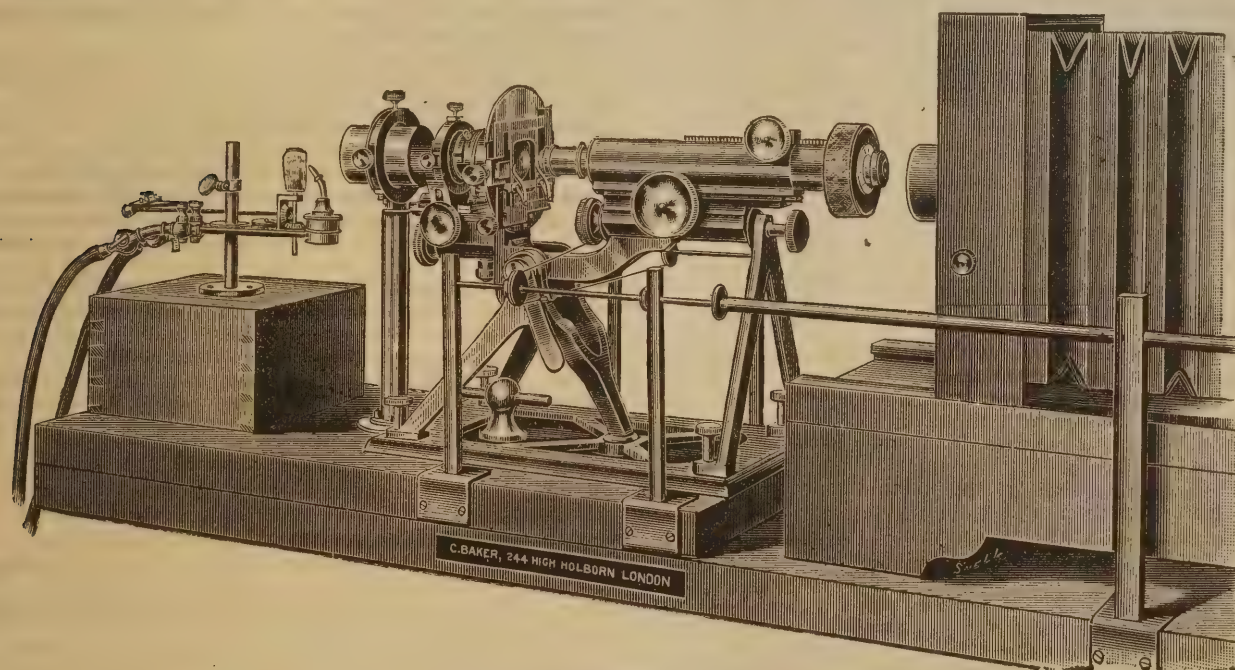


FIG. 1.—MY PRESENT INSTRUMENT.

but will be understood at once from fig. 1, or, better, from seeing an example.

The entire apparatus may be mounted at the proper height for the standing or for the sitting position of the worker. I always sit, and I consider sitting a steadier position than standing, and for critical adjustment of focus and "corrections" steadiness is necessary. Moreover, a low table or trestle is likely to be steadier than a high one.

In practice, in order to search for, examine, centre, and focus the object, the turning-table is turned out from the centre of the system; for this the clamping-screw is loosened, the square fitting of the focussing-rod disconnected, the camera-front pushed back if necessary; the turntable is then swung out so that the ocular points towards the operator. Light, condenser, object, objective, and ocular are then all in position for centering, focussing, correcting, etc. When these operations are performed, the turn-table is pushed back to its original alignment, where it is kept by a stop.

During exposure it is absolutely necessary that the following be the state of affairs: Light, optical axis of microscope and condenser, and centre of ground-glass all in

lamp, if necessary, cause its image to fall centrally on the ground-glass. Now clamp the microscope and light in position. All is now ready for work.

All may doubtless be done without any apparatus, except a microscope, a lamp, and a camera; but if we do not fix our entire arrangement in some way, this centering has to be gone through each time that we begin to work. I have seen very good work indeed, and pretty high-power work too, done with loose pieces of apparatus, but to succeed in this way requires more than ordinary patience and skill.

NOTE.—In the cut (fig. 1) the instrument is represented a left-handed. This is due to a misunderstanding which there is not time to correct.

**New Mezzotint.**—The capital picture by Mr. Jas. Sant, R.A., entitled, "A Thorn Amidst the Roses," has been reproduced in mezzotint by Mr. Scott Bridgwater. It will be remembered that the original is in the possession of the Manchester Corporation, a fact of which they may well be proud. Mr. Sant's genius is shown strikingly in the mezzotint, which does great credit to Mr. Bridgwater. The principal Painter in Ordinary to the Queen may congratulate himself upon so accurate an interpreter of his subject. Proofs and Indian prints will soon be procurable from Messrs. Dowdeswell's.



## Notes for Novices.

### RATIO APERTURE OF STOPS OR DIAPHRAGMS.

IN our last note we briefly considered the determination of the ratio value of the diaphragm apertures, and we now proceed to consider their influence on the exposure. This is by no means a difficult subject to calculate, but one often bungled over by the novice. Briefly stated, the rule is that the exposure with any two diaphragms varies as the square of the number expressing their ratio aperture. Let us take an example or two, to make this still more easy of comprehension. We have been using a lens of  $10\frac{1}{2}$  in. focus, with  $f/16$ , and find that it is desirable to use a smaller aperture diaphragm, viz.  $f/22$ , so as to obtain increase of sharpness; and to find the exposure with this aperture we square the two numbers 16 and 22.

$$16 \times 16 = 256$$

$$22 \times 22 = 484.$$

Therefore the exposures are as 256 : 484, or as 64 : 121, or practically as 1 : 2. It is therefore extremely easy to calculate the relative exposures with all the diaphragms of our lenses in the same way, and we construct the following little table for convenience:—

Ratio Aperture.	Relative Exposure.
$f/6$ .. .. .	36 = $\frac{1}{2}$
$f/8$ .. .. .	64 = 1
$f/10$ .. .. .	100 = $1\frac{1}{2}$
$f/11$ .. .. .	121 = 2
$f/16$ .. .. .	256 = 4
$f/20$ .. .. .	400 = $6\frac{1}{4}$
$f/22$ .. .. .	484 = 8
$f/32$ .. .. .	1,024 = 16
$f/40$ .. .. .	1,600 = 25
$f/45$ .. .. .	2,025 = 31
$f/50$ .. .. .	2,500 = 39
$f/64$ .. .. .	4,096 = 64

We thus get a series of big numbers which might puzzle some, so we reduce all the factors, and make  $f/8$  our unit. That is, we reckon that if the exposure with  $f/8$  be 1 sec., the other diaphragms will require an increase of exposure which is expressed in our third column above. The same rule applies whether we use a lens of 5 in. focal length or one of 22 in. focal length. We take no note of the increase of focal length, and perhaps increase of the size of plate, and merely consider the increase and decrease of the ratio aperture of the diaphragm.

### THE RATIO APERTURE NOT CONSTANT.

It must not be considered for one moment that the ratio aperture is an invariable constant quantity which cannot alter—practically it alters with every alteration of the distance of the object focussed, but when this object is near, as in reducing, enlarging, portraiture, or copying, we must again calculate out our ratio aperture from the new focal length. This is an important point too frequently overlooked—as a glance down our Query columns will at once show—as we find a query such as the following: What will be the exposure required with a half-plate R.R. working at  $f/8$  when reducing from a half-plate to lantern size? We have taken this as a sample. We do not for one moment say this actual query appeared, but many have like it. Now just let us see what actually takes place. We suppose that we are using, as the querist says, “a half-plate R.R.” Now the diameter of such a lens—we mean the actual glass of the front lens—is  $1\frac{7}{8}$  ins. (this is taken from actual measurement), the focal length is  $8\frac{1}{4}$  ins., the aperture of the largest diaphragm, that is, the fixed diaphragm in the lens tube, is  $f/8$  or  $8\frac{1}{4} \div 8 = 1\frac{1}{8}$  ins. But this is only  $f/8$  for the equivalent focus or focal length, therefore we have to recalculate the ratio aperture from the increased focus of the lens consequent on the racking out of the lens. Let us see what the racking out of the lens is. The amount of reduction of a half-plate to lantern size is practically half, therefore the increase of focal length of the lens is from  $8\frac{1}{4}$  to  $12\frac{3}{4}$ , therefore to find the ratio aperture of our fixed stop we must divide  $12\frac{3}{4}$  by  $1\frac{1}{8}$  in., and we find that  $f/8$  is now  $f/12$ . By measuring the diameter of the other diaphragms, and dividing the amount thus found into the new focal length, the ratio values will, of course, bear the same relative value one to another as at first, but the ratio aperture of each is diminished. This rule applies to every instance where an object is photographed which

is not situated at infinity, but this increase of focal length may be disregarded practically when the object is distant more than fifty times the focus of the lens.

We often see the statement of a portrait taken with a single or double lens working at  $f/8$  when actually, from the size of the portrait, it is obvious that the sitter and lens were comparatively near, and consequently the lens was working at a very much smaller aperture. This increase of focal length and consequent decrease of ratio aperture of diaphragm must be taken into account when working from published tables of exposure for portraits, enlargements, and reduction.

## Notes from the Liverpool Centre.

(By our District Editor.)

I HAVE still another death to record, that of Mr. MacDonald Bell, one of the best, as he was one of the most well-known, members of the Liverpool Society. He will also be widely known, at least by repute, to readers of the AMATEUR PHOTOGRAPHER. Mr. Bell's forte was lantern-slide making—a department in photography in which he was excelled by few. He died on Sunday night last after a short illness.

As the time draws near, the volume of correspondence and the enormous amount of interest in regard to the Liverpool (1891) Exhibition increases. The applications for space in the show, I understand, both for pictures and apparatus, point to an exceedingly large and successful function. It is hoped that, to keep pace with this and progress in other departments, headway will be made in the matter of cheap railway fares to the Exhibition, particularly, of course, for gentlemen of the photographic cult.

At the time of writing—Wednesday night—appearances indicate that there will be a big gathering at the Birkenhead Society's rooms to-morrow, when Mrs. George Thompson and Miss Thompson give their soirée and evening of general entertainment. Several gentlemen of acknowledged standing are to give short lantern exhibitions, as I think I have already intimated.

There was a profitable and instructive meeting at the Walton Association's quarters last Wednesday night, when members contributed to the discussion on the methods of intensification and reduction.

Of the new perfect dissolver by Archer, I have a few words to add. The ingenious contrivance is not christened yet, so I cannot, therefore, give its name. However, it is a dissolver for single lanterns, and has nearly the same effect as is the case in a double lantern. It is practically a frame for two slides at the back, having in front a piece of ground-glass or celluloid. The picture on the screen is dissolved by its agency, unseen, the whole being simply worked by a quadrant lever.

Another novelty of the same go-ahead firm is the “Ideal” single lantern, focussed with a camera-like bellows, and ranging up to 100 feet. The whole of the front can be removed, thus allowing for the use of scientific apparatus, and the bellows front is worked by a rack running the whole length of the lantern, in addition, of course, to the short rack on the object lenses. The instrument is elegantly and exceptionally substantially made.

## Societies' Meetings.

**Barnstaple and North Devon.**—The ordinary monthly meeting was held on the 7th inst., the subject before the meeting being “Notes on Exposure and Development,” by the Vice-President (Mr. W. Ridd). The lecturer's remarks were ably illustrated by diagrams on the black-board, and at the conclusion several plates which had received widely different exposures were developed. These, by the skilful manipulation of the demonstrator, were made to produce negatives, which, for printing value, were hard to distinguish one from the other, showing the great latitude of exposure possible on a dry-plate, if only intelligent development be employed. It was decided that the Society should undertake the photographic survey of Barnstaple and district, the Council to draw up a scheme for same, and lay it before the next general meeting. It was also thought desirable that a beginners' class should be formed in connection with the Society, and the matter was referred to the Council for consideration.

**Blackburn and District.**—Thursday, the 8th inst., was a lantern evening. Major Baron presided. It was resolved to meet



on Thursdays instead of Tuesdays. One new member joined. Major Baron will give his paper on "Stereoscopic Photography," on Thursday, the 22nd of this month.

**Brixton and Clapham.**—At the meeting on 8th inst. Mr. H. M. Smith gave an interesting address on "Film Photography."

**Cambridge.**—A large number of people assembled in the rooms of the above club on the 5th inst., when Mr. H. Smith gave a demonstration on the Kodak, films, etc.

**Croydon.**—A large number of members assembled on the 5th inst. to witness the first public performance of the new oxy-hydrogen lantern which has been constructed by the energetic Hon. Secretary, Mr. G. R. White. The instrument gave the greatest satisfaction, the lighting being even and the definition very distinct. Over 200 of the slides of members were passed through the lantern. The forthcoming meeting will be on Monday, 19th inst., when Mr. A. R. Dresser will discourse on "Hand-Camera Work," illustrated by lantern slides and enlargements.

**Croydon Microscopical.**—At the meeting on the 9th inst., Mr. E. Lovett (President) in the chair, Mr. A. W. Clayden, M.A., F.C.S., etc., gave a very interesting paper on "The Method Adopted for Taking Photographs of Clouds for Meteorological Purposes." A specially constructed camera, exhibited by Mr. Clayden, carried, in front of the lens, a square of dark-coloured glass, and the photographs were taken from the reflecting surface, set at an angle of 33 degs. A great many slides taken by this method were exhibited on the screen, consisting of fine specimens of cirrus, cumuli, and other clouds, and were noticeable for their brilliancy and depth.

**Darlington.**—The judging of the photographs sent in for competition took place on the 12th inst. with the following results:—Class I. (open to members of the society only): (1) Mr. T. Howlett; (2) Rev. C. G. Davis. AMATEUR PHOTOGRAPHER Bronze Medal for best single picture in the class was won by Mr. T. Howlett with a picture entitled "The Loose Shoe." Class II. (open to all amateurs): (1) Mr. T. Howlett. AMATEUR PHOTOGRAPHER Silver Medal for best single picture in this class was won by Mr. Edmund Barker, of West Hartlepool ("Aberdovey, North Wales"). Mr. Howlett exhibited the best picture, but as it had been shown before, it was not eligible to compete for the medal. Lantern Slide Class: (1) Rev. C. G. Davis (winner of Silver Medal in AMATEUR PHOTOGRAPHER open competition held lately). The medal granted by *Photography* for best single slide was won by Mr. T. Howlett. The judges were Mr. Edgar G. Lee (Hon. Sec., Newcastle-on-Tyne Photographic Society) and Mr. J. S. Sinclair, of this town.

**East Southsea.**—The members met on the 6th inst., when the following officers and committee were appointed for the ensuing year. Mr. J. Cleminson, President; and Messrs. J. Boyle and Israel Harding, V.C., Vice-Presidents; Mr. C. R. Wright, Treasurer; and Mr. E. J. Fielder, Hon. Secretary. The financial account of the society for the short time of its existence showed a balance on the right side.

**Enfield.**—The ordinary meeting of the Club was held on the 7th inst., the President (Mr. D. G. Pinkney) in the chair. The President read a paper on "Eikonogen," and afterwards gave a practical demonstration with this developer as compared with hydroquinone. A number of slides by members were then exhibited, and a flash-light picture of those present was taken by another member, Mr. R. B. Lodge.

**Hackney.**—The ordinary meeting was held on the 8th inst., the President (Dr. Gerard Smith) in the chair. Mr. Dean showed some prints on Alpha paper, with tones ranging from red to blue. Mr. A. Mackie gave a demonstration of the "Colloio-Bromide Process." Prefacing his demonstration with a short history of the process and its discovery, he made the working of it clear to the non-workers of this charming process. After coating a plate, he proceeded to expose it for about one second by magnesium ribbon, and develop it by a modified alkaline developer, and fix by ordinary fixing bath. He further illustrated the process by explaining the composition of the emulsion, method of preparing it, etc. Lantern slides made by this process were shown on the screen, which were the work of Mr. Mackie and Mr. Hunt.

**Ikeston.**—A photographic society for the borough and district of Ikeston was formed on Thursday evening, the 8th inst., when Dr. Carroll, the medical officer of health for the borough, was elected President; Mr. Geo. Woolliscroft (engineer), Treasurer; and Mr. Wm. Shakspeare (journalist), Honorary Secretary. Rules were adopted, and a Committee formed, and it was arranged that on the following Thursday Mr. G. Woolliscroft should give an address on "Apparatus."

**Ireland.**—An ordinary meeting was held on the 9th inst., Prof. J. A. Scott, M.B., Vice-President, in the chair. The Boston Camera Club set of lantern slides, entitled "In and Around Columbus," were exhibited, and were highly appreciated.

**Lewisham.**—The social meeting and loan exhibition of this Club was held on the 9th inst. The President (the Rev. J. Morley Wright) presided, assisted by the Vice-President (Mr. Alfred H. Miles). The exhibitors included the members of the Club and some of the lead-

ing firms. Messrs. Marion and Co. exhibited Slingsby's flash-light apparatus, six taking groups and one picture of the entire audience (about 250). The programme included a slide exhibition, at which eighty-four slides by members, and the same number from the Editor of the AMATEUR PHOTOGRAPHER, were passed through the lantern, which is a splendid instrument, built on the latest scientific principles by one of the members of the Club, Mr. R. W. James. A good programme of music and recitations was provided, as also a liberal supply of refreshments.

**Lewes.**—An ordinary meeting was held on the 6th inst., the President in the chair. Mr. A. E. Venn was elected a member. The evening was devoted to an exhibition of slides, over 200 being passed through the lantern. An exhibition of members' work, with lantern entertainment and concert, will be held on the 28th inst.

**Morley and District.**—January 7th was a lantern evening, when members and friends had the pleasure of seeing the "White Mountain" slides, which were highly appreciated by all present. In addition to the slides there were on view a set of AMATEUR PHOTOGRAPHER Competition pictures, "Inland Scenery," which were greatly admired.

**North Middlesex.**—At the annual general meeting, Mr. Humphries, F.S.A., in the chair, the following officers were elected for the ensuing year: President, J. Humphries, F.S.A.; Vice-Presidents, W. T. Goodhew, H. Walker; Curator, F. Piper; Council, C. Beadle, H. Beckett, F. Cherry, F. W. Cox, C. Gill, J. C. Lathbridge, W. A. Lavanche, C. R. Martin, G. C. S. Mummery, F. L. Pithes, G. Saville, H. Smith; Treasurer, J. W. Marchant; Hon. Secretary, J. McIntosh (14, Lowman Road, Holloway, N.)

**Notts.**—The first meeting of the year was held at the new rooms in Market Street, on the 5th inst. The business of the evening consisted of a motion by Mr. R. S. Armitage, seconded by Mr. J. Anderson, to admit lady amateurs to the Society, and another proposition that a cordial invitation be given to the Camera Club to join the Association; these were both carried unanimously. In committee, on the motion of Mr. Burrows, it was decided to set apart a whole week for the production of lantern slides of local views for exchange with kindred societies throughout the principal capitals of the world. The official meeting having closed, Mr. S. Wells, the President, again took the chair at the "smoking concert" with which the members inaugurated the new year.

**Sheffield.**—The ordinary monthly meeting was held on the 8th inst., Mr. B. J. Taylor in the chair, when it was announced that the winners of the President's prizes were as follows: First, Mr. E. Beck, with a picture entitled "With the Morning Tide"; second, Mr. Thos. Hibbert, "Cloud Effects." It was arranged that an exhibition of prize lantern slides should take place at the next monthly meeting. A resolution was passed instructing the Secretary to write to Mr. John A. Hodges, London, to offer the support of the Society to endeavour to get the same concessions from the railway companies which are now enjoyed by the fishing clubs all over the country, after which Messrs. Hibbert and Furniss gave a splendid two-man lantern exhibition of their own work, including some grand snow scenes (taken during a recent heavy storm) in Endcliffe Wood, Western Park, etc.

**Southsea.**—The first ordinary meeting of the year was held on the 7th inst., Dr. C. H. Newby in the chair. This was a lantern evening, and Messrs. W. and A. West, hon. members of the Society, exhibited about 100 slides, chiefly of yachts racing, men of war, sailors drilling, etc. The views on the Clyde were particularly noticeable for the fine (natural) cloud effects.

**Staff. Potteries.**—A lantern entertainment was given in the National Schools, Norton-le-Moors, by the Society, on the 8th inst. A number of local views and portraits were shown, together with sets describing "A Trip to Paris" and "Irish Life and Humour." During the evening music enlivened the proceedings. The room was crowded, and the proceeds have been given to the building fund of the above schools.

**West Kent.**—An ordinary meeting was held at Sidcup on the 7th inst., the President (Mr. Andrew Pringle) in the chair. Mr. Pringle presented his silver medal to Mr. E. J. Crowe for a very fine set of twelve lantern-slides; and the society's silver medal for best paper read before the society to Mr. J. Reeves, won by him after a very keen competition. The remainder of the evening was spent in passing through a number of members' lantern-slides. Next meeting will be held at Bexley, January 21st.

**Yorkshire.**—The usual monthly meeting was held on the 9th inst., the President, Dr. Tempest Anderson, in the chair. The Hon. Secretary, Mr. H. R. Moiser, read a paper on the subject of "Platino-type Printing," rapidly sketching the early history of the process so long ago as the year 1832, when Sir John Herschel experimented in this direction. The process, as finally elaborated, is due to Willis, who in the year 1880 perfected his method of hot-bath development. The minute details of the method were fully explained and especial attention was directed to points of manipulation on which difficulties were likely to supervene.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the *number and full title of the query* referred to.

## QUERIES.

4444. **Enlargement Retouching.**—Will some reader kindly give me directions and let me know the materials required for touching up bromide enlargements?—**ENLARGER.**
4445. **Enlarged Negatives.**—Will someone kindly inform me what plates and developer to use for making enlarged negatives? Will ordinary plates do, and what is about the exposure? I have an oil enlarging lantern.—**ENLARGER.**
4446. **Matt-Surface Paper.**—Will any practical worker who has used Watson's new matt-surface paper kindly inform me what are the necessities for turning out a good print? I find it almost too sensitive, and with my best negatives a great portion is a mere mass of brown colouring by the time the denser parts are sufficiently printed. Also in the toning it loses so much colour that I am at a loss to know how to use it.—**CLIFFORD BIARRITZ.**
4447. **Bromide Paper and Hydroquinone.**—I see that "Quinol," in answer to Query 4424, says: "I use the same formula as recommended for the Ilford bromide paper," etc. Would "Quinol" oblige me by giving the formula?—**MUWA.**
4448. **Toning Obernetter Paper.**—In toning this paper with a bath made up of 1 oz. hypo, 1 gr. chloride of gold, and 10 oz. water, sometimes I find it will not act properly. After long immersion the prints refuse to tone, remaining a dull brick red and facing very extensively. Can any one explain the reason of this, or suggest a better toning bath which would produce warm sepia shades without such loss of density?—**CORNWALL.**
4449. **Hand-Camera.**—I shall be glad if any one can tell me what hand-camera would be the most suitable for the following purposes: (1) For taking objects in motion (e.g., railway trains, etc.); (2) for taking portraits; (3) with a lens and adjustment, ensuring a good and reliable focus; (4) with stops to the lens, if possible; (5) the hand-camera must be inexpensive.—**THE REDAN.**
4450. **Developing Bromide Prints.**—Should I use fresh developer for each bromide paper, or can it be used more than once?—**PHIM.**
4451. **To Mount Eastman Transparent Films for Enlargements.**—Would some one kindly tell me how to mount Eastman transparent film as used in the Kodaks, for enlarging from?—**J. S. C.**
4452. **Bromide Paper.**—Will any one kindly inform me on which make of bromide paper the finest results can be obtained—Eastman's, Morgan and Kidd's, Fry's, or Ilford's? I have only used Ilford slow, which, I fancy, gives rather harsh results. Am I right?—**NEMO.**
4453. **Enlarging.**—I have purchased one of Lancaster's enlarging lanterns, 8 in. condenser, which I purpose using in my dark-room. Will some reader kindly give me a few practical instructions for using the same? What kind of paper is best, and what developer? Also say if there are any books published on enlarging. I may say when the lamp is lighted there is a little light escapes from the chimney and under the lamp. Would this be injurious to the paper if the rays do not fall on it? Any information will be gladly received by—**WILL.**
4454. **Exposure.**—Will some kind reader give me correct exposure by his meter, as, having exposed by my meter, I have got under-exposures? Actino-

meter number 60, plates 11, subject 1, *f*/32. Would Mr. Watkin kindly oblige?—**J. K. G.**

4455. **Lantern Slides.**—I have some lantern slides (34) which appear of a whitish colour by reflected light, but transparent by transmitted light. Would some one be so good as to inform me how these can be made? Is it a bleaching process? Would you please explain?—**H. E.**

4456. **Shutter.**—Where can I obtain a shutter for hand-camera that requires no setting?—**INKY-FINGER.**

4457. **Oxy-Benzine Light.**—Will any one who has used the oxy-benzine limelight kindly give me any information about it? Can a better light be obtained than with hydrogen? Is it safe to use? Is much more oxygen required?—**T. C. W.**

4458. **Combination Rectigraph.**—Will some one who is using Lancaster's combination Rectigraph patent half-plate lens, No. 376 C, please to state if it is a reliable lens, and what kind of results he gets from it at each of the three angles? I should like to see prints, if possible, of each angle, as I was thinking of getting one, and have not a catalogue of any other make to choose from.—**AMATEUR.**

4459. **Hand-Camera, Loan of.**—Being desirous of making a hand-camera carrying twelve plates in sheaths I should be greatly obliged if any gentleman would be kind enough to lend me working sketches of one, and of which every care would be taken.—**ARTHUR BEARD.**

## ANSWERS.

4430. **Enlarged Copy.**—Copy it full size first, and then enlarge the resulting negative. This is the most satisfactory method.—**MEMNON.**

4431. **Argentotype and Sepiatype Papers.**—Argentotype is merely a fanciful name given to Fry's make of bromide paper, and equally good results can be had on this as on any other make. Sepiatype also gives good results of its kind.—**MEMNON.**

4432. **Mottled Marks on Negatives.**—The marks may arise from many causes. (1) Not rocking the plate during development. (2) Putting into an alum bath immediately after development. These are the most likely causes. The others would not be under your control.—**OSIRIS.**

4433. **Bromide Prints.**—Bleach the prints in a solution of cupric chloride, as suggested in the "Dictionary of Photography." Wash well, and redevelop with hydroquinone.—**MEMPHIS.**

4434. **Copying.**—It is impossible to give full directions in these columns. For oil paintings you must use colour-sensitive plates, and illumine the object by yellow light, or else use a yellow screen. Use the largest stop that will give you good definition. Utterly impossible to give any idea of exposure, as this varies with the light, plate, colour of object, stop, and distance of object. If you will send addressed envelope to the Editor, I shall be pleased to give you further help.—**MEMNON.**

4434. **Copying.**—You should place in a good diffused light, and see that there are no reflections from the surface of the object. If the picture is painted with strong contrasts, expose in clear daylight from half to two seconds, but by gallight the exposure varies from two and a-half to five minutes according to illuminating power. You will find it much easier to focus if you turn the picture upside down.—**JOHN H. MONTAGU.**

4435. **Tripod.**—Mr. William Whiteley sells a pine sliding stand, very light, quickly adjusted, no loose screws, and perfectly rigid, for 11s. 6d.—**JOHN H. MONTAGU.**

4435. **Tripod.**—You want too much for the money. All the qualities you want cannot be had under 21s.—**KUKLOS.**

4436. **To Make Hand-Camera.**—Shew's Eclipse changing-box is the only one which would answer your requirements.—**KUKLOS.**

4437. **Book on Exposure.**—There is no book on the subject, and it would be impossible to give any actual help within the limits of an answer.—**MEMNON.**

4438. **Camera Making.**—Square bellows, back extension, swing back from centre, rising and falling front. The best form of slide is that made by Skinner, of Dereham, to be seen at Mothersill's, in Southampton Row.—**MEMNON.**

4439. **Fixing Prints without Hypo.**—I have tried it with so far good results. The formula is:—

Chloride of magnesium ... 15 grms.  
Alum ... 2  
Water ... 100 cc.

No one has tried it in place of hypo in the fixing bath. It can be very easily made, according to Mr. Wall, by dissolving about 120 grains of heavy calcined magnesia in 1 oz. of pure hydrochloric acid diluted with water. Perhaps he could tell you more about it.—**MEMNON.**

4440. **Vignette Glasses.**—There are two kinds—the French, made with tissue paper; or the ordinary, made of flashed orange glass, the centre of which is cleared with hydrofluoric acid.—**OSIRIS.**

4441. **Oil for Lantern.**—What lantern, dark-room or projection? Use the finest crystal Al paraffin, and dissolve 1 oz. of camphor in a pint.—**MEMNON.**

4442. **Toning.**—Gold always will deposit to some extent with the borax bath, and nothing will prevent it. Filter it out, and add a little more gold and borax.—**OSIRIS.**

4443. **Toning Matt Prints.**—Print deeper. Use a weak gold bath, or one that has been used for some time for ordinary prints. The ordinary baths are too strong. Wash well, and then tone.—**MEMNON.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us **BEFORE TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT.**

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**A. W. GOTTLIKE.**—The meaning of the paragraph is that no competitor, having won a bronze medal in a monthly competition, will be able to take a second bronze; he can only then compete for the silver medal.

**VERITAS.**—The hand-cameras you mention are good, but we should prefer No. 1 in the list you give.

**T. GLAZEBROOK.**—The only stipulation is that all the work is done by the competitor. See declaration on entry form.

**J. GRANT.**—The plates you mention are good, and will produce good negatives.

**PHIM.**—An endeavour is made to publish the *Reporter* by the first of the month, but the desire to get the latest items sometimes prevents this.

**J. C. H.**—The camera you mention is a very good one. The latter lenses would be the better; the manufacturers would pair them for you.

**SPIKE.**—They are quite as rich as any others at the price. Our choice is 3, 4, 5, 1, 6, 2.

**CORNWALL.**—Let us have the lenses up at your earliest convenience, and we will see what we can do.

**E. DICKSON.**—No. 2 is the best for portraits, No. 1 for architectural. The front or back combination would cover half-plate. 3 and 4: The latter set is superior. 5: No, you want no other lens at present. 6: A good instrument for the money. Always pleased to help you.

**ROGO.**—The diaphragms are numbered on a system introduced by Mr. T. R. Dallmeyer, in which the figure obtained by dividing the focal length by the aperture is squared and divided by ten. Your diaphragms marked  $7.5 = f/8$ , or U.S. 4;  $10 = f/10$ , or U.S. 5.6;  $15 = f/12$ , or U.S. 9;  $25 = f/16$ , or U.S. 16;  $50 = f/22$ , or U.S. 30.25;  $100 = f/33$ , or U.S. 68.08.

**HY. LEACH.**—Certainly, use a *nom-de-plume* if you like. See page 51, this week, for rules. Pleased to welcome you, and wish you success.

**J. E. R.**—We should very much like to see the "Holy Land" views, and shall be much obliged if you will send them on.

**T. D'AUBAN.**—The lines are obtained by using what is called a "lineature," or "line screen," which is a sheet of glass ruled with parallel or transverse lines; this is placed either in front of the plate in the camera, or placing it behind a transparency in front of the camera. One of the best books on the subject is Wilkinson's "Hand-book on Photo-Engraving, etc.," to be had from our publishers, price 5s. The subject is too copious to treat here.

**S. W. P. COWAN.**—Will answer next week.

**HIPPED.**—Add 40 gr. of quinol to the 10 oz.

**CHESHIRE.**—(1) Quite as good as can be expected for the money. (2) Yes. (3) A, the plate is over-exposed and under-developed; the print, under-printed and over-toned. B, over-exposed and under-developed; the stains are probably due to insufficient fixing. Still, you cannot be surprised at such poor results for first attempts. Let us see some more work in a month. Send good as well as bad work.

**THEA.**—You have got complete reversal of the image, which may be caused by two things—one, great over-exposure, which seems likely to be the cause in this case; and, secondly, by contamination of the developer with some hypo.

**A. RUSSELL.**—The interior suffers badly from halation. You ought to have backed your plate. It would have been better to have placed your camera exactly central with chancel arch and east window, and your camera was not quite straight. A little use of the swing back would have obviated this. The plate was well exposed.

**CLIFFORD D. FOTHERGILL (Biarritz).**—Your note to hand; we will reply next week.



**HENRY DUPUY.**—(1) Very fair. Print a little too dark. (2) Under-exposed. Coat the back of plate with matt varnish, and paint over rock on left with gamboge water-colour. (3) Good. Considering that you are only a beginner your work shows very good promise. Be a little more careful in trimming and mounting prints. What developer are you using—is it hydroquinone? Shall be pleased to see some more of your work.

**DERWEN DOTHU.**—We should place them in the following order, though any of them are good—5, 2, 3, 4, 1, 6.

**LIONEL THIRKELL.**—Certainly, it would produce such negatives. See our comments on competition pictures in the *Photographic Reporter*. It is possible, but awkward, to use it in the hand.

**BEGINNER.**—In answer to your first question, we should leave them in the order in which you have placed them. We should have no preference in regard to your second question.

**M. EGERTON.**—(1) Five or six times. (2) Perken Son, and Rayment sell them. (3) Lancaster's have a good form for both kinds of light; Perken, Son, Rayment. (4) Platt's; the Ludgate. (5) Mr. Cameron, architect, Inverness, is the patentee. (6) No.

**G. E. HERMON.**—The smaller would be the more convenient, and we should advise taking 1 and 2. In the event of your electing to take the larger we should recommend B for general work. In Italy, yes; we cannot speak as to the other.

**C. S. COBB.**—May we cut up one of the films to test? It looks rather like a deposit caused in the manipulations in some way.

**LEO.**—You did not mark your prints; we have done so. (1) You have no pure whites nor blacks in the print, consequently the same looks too grey and flat; it is a good subject. (2) About one inch of the foreground could be cut off with advantage; the print is again too flat and grey. (3) This is better; a better point of view is half-way up bridge looking to the left. (4) Good; here there is also too much foreground. You certainly want a little more artistic training before entering a competition. You have good apparatus and ought to turn out good work. Send us some more work in about six weeks.

**F. G. SHEFFIELD.**—No. 2 plate. We cannot understand your paper taking so long to tone; we can generally tone it in fifteen minutes. Write us again on this point, telling us exactly how you go to work. Almost all your prints are too dark. (1) Fair; what is the matter with the albumen of this print? (2) Too dark. (3) Nothing in it. (4) Bad; the black leaves at the top quite spoil it. (5) No principal object; the eye wanders all over it, wondering why it was taken; the print is again like No. 1, covered with millions of cracks. (6) Very fair; the foreground might well have been lighter. (7) Would have been good if the camera had been level and the paper had not shifted in printing, and had been mounted more carefully. (8) Very fair. (9) Good. (10) Nothing is sharp anywhere, and the print looks washed out; it could be made a picture. (11) Not at all bad for an evening effect, but everything has a double outline. (12) Good. (13) The vignetting spoils this. You must do better work before you can exhibit, and be more careful in printing and mounting.

**H. R. S.**—(1) A. Mercury bichloride, 10 gr.; bromide of potash, 10 gr.; water, 1 oz. B. Ammonia, 1 dr.; water, 7 dr. Stick to this. (2) Certainly; every negative should be varnished. (3) We take you at your word. You have got more money than wit. Keep your lens and your money. A good worker will turn out good work with a poor lens; you have got one of the finest lenses made. (4) Yes, all the detail, except in the heaviest shadows, should be so visible. You did not give us your address, so we cannot say whether you are in town or country; anyhow, we shall be pleased to see you any Monday, with specimens of your work, or, if you will send us some prints, we shall be pleased to give you some hints, and an idea whether you would stand a chance.

**J. F. HEWITT.**—Do not trouble yourself; with the quantity you use there is no waste. We frequently have to use 9 ft. per light for a two hours' show. How the professionals manage we don't know.

**SLEWON.**—The rule you want is as follows:—

Let  $D$  = the distance of object,  
 $f$  = the focus of lens,

$$\frac{D}{f} = \frac{f}{x}$$

or, as  $D - f : f :: f : x$ .

Or, as the distance of the object (measured from a point one focal length in front of the centre of the lens) is to the equivalent focus, so is the equivalent focus to the extra focal length required. In your case,

$$36 - 5\frac{1}{2} = 30\frac{1}{2}.$$

$$:: 30\frac{1}{2} : 5\frac{1}{2} :: 5\frac{1}{2} : x = 1\frac{1}{2}\text{ in.}$$

Practically to take an object at 3 ft. the distance between lens (optical centre) and sensitive surface must be  $5\frac{1}{2} + 1\frac{1}{2}\text{ in.} = 6\frac{1}{2}\text{ in.}$

**G. H. PRESTON.**—(1) Yes, it is a good instrument.

(2) Yes. (3) The angle included would be 66 deg.

(4) The Iris are more convenient.

## Quarterly Examinations in Photography.

### QUESTIONS.

- Describe the methods for testing a lens for chromatic and spherical aberration, the aberration of form, the aberration of thickness, and the aberration of position of lenses.
- What is the meaning of the terms chemical and visual foci? Explain the principle of constructing an achromatic doublet from two uncorrected lenses, if this can be done?
- What is a "flare" and a ghost, and how are they caused?

(Latest Day for Answers—January 26th.)

### RULES.

- Answers must be received on the morning of the Monday week following the publication of the question.
- All answers must be preceded by the question, and should be written on one side of the paper only.
- A *nom de plume* may be used, but in every case the full name and address must also be given.
- Answers must not exceed 250 words, unless otherwise stated by the examiners.
- Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—  
"EXAMINATION DEPARTMENT,"

AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Lantern Slide Exchange.

**NOTE.**—There is no CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

Will exchange twelve coloured views, "Heroes of the Lifeboat," twelve coloured views, "Old London," and thirty-six plain slides of views in Kent, for amusing or comic slides for children.—Crossley, Rodley, Leeds.

Will exchange a dozen architectural or landscape slides for the same number of figure studies.—H. A., 71, Paulet Road, Camberwell.

Have a dozen river scenes which I should like to exchange for same number of animal studies.—D. Williamson, 156, Amhurst Road, N.E.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny Stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum being one shilling, upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 6d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

**Camera.**—Camera for sale, nearly new, cheap have no use for it.—Mrs. Elder, Diamond Cottage, Balcombe.

**Cameras, etc.**—Half-plate camera (Wood, Cheap-side), no lens, three double backs, waterproof lock-up case, tripod (in case), and stand; £3; cost more than double.—Brown, 176, High Street, Camden Town, N.W.

**Cameras, Lenses, etc.**—1890 Lancaster's Instantograph camera, slide, tripod, 7 by 5 R.R. lens, new, 67s. 6d.—R. Henry, 2, Hawthorn Villas, Slad Road, Stroud, Glos.

First-class quarter-plate camera, reversing swing-back, rack adjustment, double extension, six double dark-slides (two spare fronts), Optimus rapid rectilinear 5 by 4 lens, two-fold tripod, waterproof case, lamp, folding rack; £29.—Burton, 53, Jasmine Grove, Anerley.

For sale, Underwood's quarter Instantograph camera, Ross' landscape lens, Lancaster's Universal tripod, changing box, two dark-slides, developing dishes, etc.; price £3; deposit.—Willis, 26, Duke Street, Chester.

Whole-plate Blicliff, three double backs, Optimus lens, Kershaw shutter, tripod, waterproof case, holds the lot; £12; on approval. Wanted, Shew's hand-camera.—Robert J. Evans, Cromac Works, Belfast.

Thornton's 10 by 8 camera, Ross' rapid symmetrical 10 by 8, tripod, etc., cost £24; good square bellows, 6½ by 4½, taken in part exchange, Watson's Premier preferred; approval; particulars.—Walton, Churchtown, Southport.

Watson's whole-plate Premier camera and tripod, three double slides, R.R. and W.A. lenses and accessories, new last year; offers wanted. Enlarging apparatus, 75 candle-power lamp.—W. Jones, Enfield House, Uffculme, Devon.

Lancaster's 1890 half-plate International camera, lens, and tripod, two dark-slides, little used; £4.—McGibbon, Chemist, Roinburgh.

Half-plate bellows camera and lens, rack movement; 35s.—Holt, 85, Church Street, Church.

**Hand Cameras, etc.**—Fallowfield's Faeile hand-camera, very latest pattern, cost £6 10s.; R.R. lens, four stops, covered morocco leather, only three months old, guaranteed perfect as when new; price £5.—Replies to No. 94, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

New 5 by 4 Shew's Eclipse hand-camera, with three double backs and Wray's 5 by 4 R.R. lens, with rack adjustment and Shew's Eclipse shutter; cost over £8; price £5.—No. 99, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Lenses.**—Ross' half-plate rapid symmetrical lens, with diaphragms, complete; £4; bargain.—Barton, Morriston, Elgin.

Quarter Euryscope, f/6, R.R. lens, as new, 19s. 6d.; 7 by 5 R.R., working at f/8, 21s., with Waterhouse stops.—John Slade, Slad Road, Stroud, Glos.

Levi's portrait lens, 15s.; lantern objective, 10s.; Lerebours and Secretan's quarter-plate portrait lens, 20s.; quarter-plate portrait lens, 15s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

Sell Lancaster's whole-plate Instantograph lens and stops; 25s.—Vicarage, Kirby Grindalythe, York.

Morley's whole-plate landscape lens, 10s.; also 5 by 4 wide-angle rectilinear, by private maker, 26s.—Bennett, 43, Mitchell Street, E.C.

Half Optimus rapid rectilinear lens and Self portrait, covers half-plate sharp; 28s.—2, College Street, Northfleet, Kent.

**Sundries.**—Set of brass fire irons, full size, very pretty pattern, suitable for dining or drawing room, nearly new; cost 15s.; price 8s. 6d.; approval.—A. Henry, 4, West Brixton, S.W.

For sale, complete enlarging set, Marion's 7 in. condensers, 15 by 12 and 17 by 23, dishes, lens, and sundries, price £5; also Optimus detective camera, Euryscope lens, six double backs and stand, price £5; approval; deposit.—Barrow, Argyle Terrace, Belgrave Road, Leicester.

"Photographic Quarterly," first four numbers; what offers?—Green, 29, Woodbridge Road, Ipswich.

AMATEUR PHOTOGRAPHER, 269 to 325, clean, best offer.—Dunn, 9, Whitebaugh Terrace, Paisley.

AMATEUR PHOTOGRAPHER, 140 numbers, also half-



plate camera; will exchange the lot for quarter-plate camera.—J. Graham, New Lanark.

For sale, quarter-plate apparatus, frame, and dishes for cash, or will exchange for Stirn's improved Secret vest camera, frame, and dishes, else for something useful. — Apply, B. Dry, 3, St. Margaret's Street, Canterbury.

### WANTED.

**Burnisher.**—Half-plate burnisher; exchange handsome pair of opera glasses in case.—D. White, Stores, Ardington, Wantage.

**Cameras.**—Half-plate camera, square swing-back, etc., must be good and cheap, for cash and miscellaneous collection of lantern slides.—J. Harriman, Henley-on-Thames.

**Stereoscopic camera,** Chadwick's preferred.—No. 93, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Half-plate camera, complete; exchange 8-air musical box, with bells, value £3.—Frederick Sharpe, Oakham.

Quarter-plate Le Merveilleux camera (Lancaster's); exchange for Griffith's guinea and half detective camera; letters only.—John T. Roberts, Market Vaults, Abergele, North Wales.

**Camera, etc.**—Watson's Acme camera, 7½ by 5, complete with turntable and tripod.—No. 98, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Cameras, Lenses, etc.**—Half-plate camera, R.R. lens, tripod, three double backs, etc., complete.—Rosenath, Enfield.

Half-plate camera and lens, in exchange for good 5-stringed banjo, black walnut neck, sycamore and ebony veneered finger board, nickel silver rims and brackets, ivory keys, Roger Head, complete with Dallas's banjo chart, in waterproof case, equal to new.—No. 98, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

10 by 8 modern camera, slides, and 9 by 7 Eury-scope.—D. Jack, 15, South Frederick Street, South Shields.

Half-plate camera, with double extension, usual adjustments, and slides; lens optional.—Alpha, 2, Halford Terrace, Richmond, Surrey.

**Lenses.**—Cabinet portrait lens (by Ross, Grubb), must be in good condition.—L. Pabst, Clifden, co. Galway.

Half or full plate, good, cheap lens.—C., care of Neelds, 121, High Street, Peckham.

Ross' whole-plate rapid symmetrical, cheap.—Vicarage, Kirby Grindalythe, York.

Lenses, 7 by 5 Optimus Eury-scope; exchange 10

by 8 camera, double slide, all improvements.—Dukes, Llangadoc, South Wales.

**Lens, etc.**—Quarter-plate fixed focus lens and shutter.—T. James, 60, Broad Street, Worcester.

**Magic Lantern.**—Magic lantern, 3½ in. slides.—Lowest price to S. Kirkham, Court Place, Carlisle.

**Negatives.**—The loan of negatives, scenes in connection with haymaking, to make lantern slides, for a charitable object; all carriage paid, or messenger sent to London Hon. Sec.—No. 97, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Sets.**—12 by 10 modern set, complete, with first-class R.R. and W.A. lenses.—State full particulars and lowest cash price to No. 92, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Sundries.**—Part I of "Encyclopedia of Photography." Red Hill Cottage, Chislehurst, Kent. Vols. ii. and iii. of "Camera," good condition, clean, for cash.—Edward Lee, 13, West Hillary Street, Leeds.

Cases for storing quarter-plate negatives.—Hewerton, Hill Top Lodge, Ulverston.

Commercial man (with some knowledge of photographic apparatus), travelling through principal towns, to call on photographic dealers, on commission.—No. 95, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Tripod.**—Tripod, for half-camera, cheap.—F. J. Thornton, 15, Bromley Road, Beckenham.

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### NOTICES TO SUBSCRIBERS.

Subscriptions must be prepaid.

UNITED KINGDOM .....	Six Months, 5s. 6d.	Twelve Months, 10s. 10d.
POSTAL UNION .....	6s. 6d.	13s. 6d.
INDIA, CHINA, ETC. ....	7s. 9d.	15s. 3d.

### NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the **Amateur Photographer** are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the **Amateur Photographer** are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or Apparatus for Notice or Review are to be addressed to the Editor, **Amateur Photographer**, 1, Creed Lane, Ludgate Hill, London, E.C.

**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.**—Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the Editor, **Amateur Photographer**, 1, Creed Lane, Ludgate Hill, London, E.C.

### SPECIAL COMPETITION,

ILLUSTRATING THE

### "SEVEN AGES OF MAN,"

As described in Shakespeare's Play "AS YOU LIKE IT" (Act II, Scene VII.)

FIRST PRIZE ... ..	GOLD MEDAL.
SECOND " ... ..	SILVER MEDAL.
THIRD " ... ..	BRONZE MEDAL.
FOURTH " ... ..	CERTIFICATE.

**CONDITIONS.**—That the Photographs shall be from life, in the costumes and with the surroundings of ordinary daily life. Photographs in which the subjects have been "got up" will be rejected.

The prints may be by any process. The prize photographs will become the property of the Proprietors of the **AMATEUR PHOTOGRAPHER**, who will have the right to call for the use of the negatives.

All the work must be done by the Competitor. The photographs are to be mounted, and the title, with quotation from the play

neatly written or printed upon the mount. Each photograph is to be numbered in the order of the "Ages."

All contributions must be received on or before Saturday, 28th February, 1891, addressed:—"Seven Ages of Man,"

EDITOR:—AMATEUR PHOTOGRAPHER,  
1, Creed Lane, London, E.C.

### "AMATEUR PHOTOGRAPHER" MONTHLY LANTERN SLIDE COMPETITION.

Prizes:

SILVER AND BRONZE MEDAL AND CERTIFICATE.

	LAST DAY.
LANDSCAPE, SEASCAPE, AND RIVER SCENERY .. ..	Jan. 22nd.
Second Competition.	
PORTRAITURE AND FIGURE STUDIES. . . . .	Feb. 19th
Third Competition.	
ANIMALS AND INSTANTANEOUS PICTURES. . . . .	Mar. 19th.
Fourth Competition.	
ARCHITECTURE (INTERIOR AND EXTERIOR). . . . .	April 16th.

The Competitions will be resumed in September.

**CONDITIONS.**—Each competitor must send in two slides. Any competitor winning a Silver Medal will be disqualified from entering the subsequent Monthly Lantern Slide Competitions. The winner of Bronze Medal or Certificate can only compete for the higher prize or prizes in subsequent competitions.

The awards will be published in the **AMATEUR PHOTOGRAPHER**, and a general note given upon each competition.

The slides of competitors which do not gain a prize will be divided into three classes, according to merit, and the competitors' names, etc., published in the *Photographic Reporter*.

All slides entered for competition to become the property of the **AMATEUR PHOTOGRAPHER**.

**NOTE.**—The slides will be passed through the lantern at the Office of the **AMATEUR PHOTOGRAPHER** on the Monday evening in each month immediately after the date upon which the slides have to be received.

Particulars as to admission, and entry forms, may be had by forwarding stamped directed envelope to

THE EDITOR,  
"AMATEUR PHOTOGRAPHER,"  
1, CREED LANE, LONDON, E.C.

### "AMATEUR PHOTOGRAPHER" MONTHLY PHOTOGRAPHIC COMPETITIONS.

THE Proprietors of the **AMATEUR PHOTOGRAPHER** offer, Monthly, two prizes consisting of a

SILVER AND A BRONZE MEDAL (WITH RIBBON AND CLASP), for the best and second-best photographs sent in to each of their Monthly Competitions. The subject of the Competitions will be as follows:—

No. 21.—ANIMALS AND INSTANTANEOUS SUBJECTS ... ..	Feb. 2.
" 22.—SNOW AND HOAR FROST ... ..	Mar. 2.
" 23.—INLAND SCENERY ... ..	April 2.

Only one print is to be sent in; the negative of the prize pictures shall be at the service of the Proprietors, and all the prints sent in shall become the property of the Proprietors of the **AM. PHOT.**

All photographs for any of the above competitions will be acknowledged in the columns of the **AMATEUR PHOTOGRAPHER**.

All photographs criticised, and several reproduced every month, in the *Photographic Reporter*.

Entry forms on receipt of stamped addressed envelope. Apply to the Editor **Amateur Photographer**, 1, Creed Lane, Ludgate Hill, London, E.C.



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645  
Telegraphic Address: VINEY, LONDON

Offices: 1, Gress Lane, Ludgate Hill, London, E.C.

VOL. XIII. No. 329.]

FRIDAY, JANUARY 23, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

WE have just received a communication from Mr. S. G. Buchanan Wollaston advising us that a photographic exhibition will be held at the Crystal Palace from the 13th of April to the 2nd of May. The exhibition will be chiefly devoted to photographs, lantern slides, and transparencies. It is expected that some of the manufacturers will take stalls for the exhibition of their goods. Further particulars will shortly be announced. We feel that it will give much satisfaction to many of our readers who are either professional or amateur photographers, to learn that the Crystal Palace Company have again arranged a photographic exhibition. We hear that the exhibition will be under the management of Mr. Wollaston.

A PHOTOGRAPHIC exhibition is shortly to be held at St. Petersburg, on, we understand, a very extensive scale.

THE Hon. Secretary of the Camera Club, Mr. George Davison, has kindly forwarded us a copy of the preliminary notice of the 1891 Photographic Conference. It will be held, as heretofore, in the theatre of the Society of Arts, on Tuesday and Wednesday, April the 7th and 8th, under the presidency of Captain W. de W. Abney, C.B., R.E., D.C.L., F.R.S. On the evening of Monday the 6th, a smoking concert will be given at the club-house, and an exhibition of members' photographic work will be opened. On Tuesday the 7th, papers will be read in the afternoon from 2 to 5.30, and in the evening an exhibition of lantern slides will be given. On Wednesday the 8th, the reading of papers, etc., will be continued at 2 p.m., and at 7.30 the members will dine together. We would especially call attention to the fact that all photographers are invited to attend and take part in the discussions upon the papers read during the Conference at the Society of Arts. The complete programme will be issued at a later date.

WE shall hope to be in a position next week to publish the awards in connection with the "Holidays with the Camera."

THE slides contributed to the AMATEUR PHOTOGRAPHER Monthly Lantern-slide Competitions will be passed through the lantern at our offices on Monday next, commencing at 5 p.m. Competitors are invited to attend, and will be admitted upon presentation of visiting card.

THE President (Herr C. Srna) of the Vienna Club of Amateur Photographers has sent us a reply to a letter

published in our issue of the 2nd inst., upon the Exhibition. It is to be regretted that the prospectus does not clearly set out that the photographs exhibited must be the sole work of the exhibitor. In this country it is well known that until the AMATEUR PHOTOGRAPHER insisted that all photographic work should be done by the exhibitor, many called in the aid of professionals, not only to retouch, but to develop, print, tone, etc. We may add that the writer of the letter complained of is not an Englishman, hence he has some slight difficulty in expressing himself in our language. He is an amateur photographer of very considerable ability, and his photographs have at different times received high commendation.

IN the last issue of the AMATEUR PHOTOGRAPHER we made an appeal for a hand-camera for two ladies who are practising photography. We are very pleased to state that Messrs. Talbot and Eamer, of 7, Exchange Street, Blackburn, have written to us: "We have pleasure in presenting the ladies with one of our 'Talmer' hand-cameras, and have sent same to you this day, carriage paid." We shall be delighted to forward the "Talmer" hand-camera to our correspondents, who are at present residing at Avignon, France, and we are sure that they will suitably acknowledge, and be very grateful for, Messrs. Talbot and Eamer's useful present.

THE question of copyright in photographs having recently attracted much attention amongst amateurs, it may be of interest to our readers to know that the only portrait of himself in existence, when Father Damien died, was a photograph not from life, but from a drawing. This fact was not generally known, however, and the photograph in question was copied, reproduced, and published in a whole host of newspapers in due course. Directly after publication, however, the man who had made the original drawing came down upon the proprietor of every newspaper which had infringed his copyright. He, it is said, imposed his own terms, asking as much as £50 in some cases, and the money was paid because it was felt to be cheaper to pay even £50 than to go to law with a virtual certainty of being defeated.

THE recently-formed Dunedin Photographic Society declines to have professionals as ordinary members, or to take any part in the business of the meetings, but, thinking at the same time that mutual benefit might be derived by the occasional association of the two, it allows professionals to be honorary members, which permission has



been taken advantage of by several professionals in the city. The rule runs as follows:—

"The Society shall consist exclusively of amateur photographers and honorary members. The designation 'amateur photographer' shall not apply to any person who sells any print or negative of his own or his employes' production, or does any photographic work for any remuneration whatever. But it may apply to a dealer in photographic apparatus or material, who is not disqualified by the sale of his own or his employes' work."

THE Putney Amateur Photographic Society is enterprising, to say the least of it, and has had a handbill printed and circulated all over its district, calling attention to the claims of the Society in the following terms:—

"PUTNEY AMATEUR PHOTOGRAPHIC SOCIETY.—President, the Hon. Baron Pollock; Vice-Presidents, Mr. T. Gilbert, Rev. L. Macdonald; Council, Mr. Charles Ballard, Mr. E. V. Barrett, Mr. W. H. Congreve, Dr. J. F. Farrar, Mr. W. F. Gorin, Mr. J. C. Leman, Mr. M. G. E. Manifold. A society under the above title has been formed in this district. The meetings are held fortnightly, on the second Wednesday and last Saturday in each month. Annual subscription, 10s. Ladies and gentlemen desirous of joining are invited to communicate with any member of the Council, or with Chas. Ballard, Hon. Secretary, 46, Erpingham Road, Putney."

HERE is a great opportunity for those of our readers who like scientific experiment and investigation. We have all heard of spirit photographs, and many of us have either made them or got them when we did not want them, but now we have Prof. Russell Wallace writing in the American review, *The Arena*, as follows:—

"Perhaps the most remarkable series of experiments ever made on this subject are those carried on during three years by the late Mr. John Beattie, of Clifton, a retired photographer of twenty years' experience, and Dr. Thomson, M.D. (Edin.) a retired physician, who had practised photography as an amateur for twenty-five years. These two gentlemen performed all the photographic work themselves, sitting with a medium who was not a photographer. They took hundreds of pictures, in series of three taken consecutively at intervals of a few seconds; and the results are the more remarkable and the less open to any possible suspicion, because there is not in the whole series what is commonly termed a spirit photograph, that is, the shadowy likeness of any deceased person, but all are more or less rudimental, exhibiting various patches of light undergoing definite changes of form, sometimes culminating in undefined human forms, or medallion-like heads, or star-like luminosities. In no case was there any known cause for the production of these figures. I possess a set of these remarkable photographs, thirty-two in number, given me by Mr. Beattie, and I was personally acquainted with Doctor Thomson, who confirmed Mr. Beattie's statements as to the conditions and circumstances under which they were taken."

THE Eisteddfod, which is to be held next July at Blaenau-Festiniog, will prove a little more attractive for amateurs than previous meetings have done. The Bards are holding out inducements to amateur photographers to visit their lovely country. There is to be a competition open to amateur photographers, and a silver medal will be awarded for the six best photographic views (half-plate) of North Wales scenery. The judge is Mr. J. Oswell Bury, Wrexham, and further particulars may be obtained from Mr. H. Hughes, Eisteddfod Secretary, Blaenau-Festiniog.

THE Adelaide Amateur Photographic Society is by no means behind the times, so far as experimental photography is concerned. At a recent meeting Mr. Clough gave an exhibition of flashlight photography with magnesium powder. The plate exposed was then developed and gave a negative of good printing density, showing fair detail. At

the same meeting the subscription was reduced from £1 to ten shillings.

MAJOR E. J. BECHER, R.A., writing in reference to our note of last week about the adventure of Mr. Davis, Chief Engineer of the *Benbow*, at Malta, says:—

"It may interest your readers to know that officers of all mail steamers have been requested not to allow passengers to take photographs of any British fortress."

THE entry forms for future Monthly Competitions will, we hope, be ready during the course of next week, when copies shall be forwarded in answer to the numerous applications we have received since our list was published.

THE secretaries of clubs would do well to send in applications for the loan of our Monthly Competition prints, several of which have just returned from circuit. There are available amongst others, "Inland Scenery," "Seascape and River Scenery," "Landscape with Figure," "Figure Studies," and "Instantaneous." The "Travelling Student-ship" prints are still available.

THE employes of Messrs. Percy Lund and Co. spent a very pleasant evening together on Saturday last, on the occasion of their annual social gathering. After partaking of tea at five o'clock, a couple of dramatic sketches, "Wanted, a Servant" and "The Lost Umbrella," and a comedietta, "Outwitted," were performed, and the remainder of the evening was divided between songs, recitations, and games of various kinds.

THE members of the photographic society in connection with the Friends' Meeting House, Stoke Newington, held their annual conversazione on the 14th. A very pleasant time was wiled away by means of the lantern, through which about 200 slides, made by the members, were passed. They included views in America, Norway, Sweden, Italy, and England. There were a considerable number of prints hung around the walls.

MR. TEBBUTT, the famous amateur skater, who has just returned from Holland, is an enthusiastic photographer, and during his recent skating tour he carried a hand-camera with which he secured a number of photographs of skaters in the various attitudes common to that class of persons, some of which are very amusing.

THE death of Surgeon-General T. Graham Balfour, M.D., F.R.S., honorary physician to the Queen, recalls to our recollection the fact that in his address as President of the Royal Statistical Society, 1889, he devoted a large portion of his attention to a criticism of the "Recidivist" system, which owes much to photography as a means of the identification of criminals. It may be remembered that Dr. Balfour was one of the deputation who had the advantage of a full exposition of the Bertillon system from the Chief Commissioner of the French police.

**New "Constable" Etching.**—The well-known picture, "The Jumping Horse," by John Constable, R.A., which now hangs in the Diploma Gallery, Burlington House, has been admirably etched by Mr. William Hole, R.S.A., and prints are promised shortly by Messrs. Dowdeswell's. Despite the difficulties presented in this picture, the etcher has reproduced the distinguishing features of the picture with much fidelity. The sky is particularly admirable.



## ECONOMICAL DEVELOPING DISHES.

SUCH dishes as described in the preceding article, namely, those made by folding the four edges of sheets of paper or cardboard, and securing the corners by means of clips, may be very advantageously fashioned out of sheet tin. As a tray made of such material would be more permanent than those previously alluded to, it is worth while, if possible, to solder the corners, instead of merely holding them together by means of clips. In the employment of tin or other metals it is a *sine qua non* that they be enamelled or painted, to prevent the solutions from attacking them. A tin dish such as above referred to, coated with Aspinall's white bath enamel, will stand most acid solutions and also weak alkaline ones. After a while—from six to twelve months—the dish will need a fresh coat.

In place of making a metal dish, the amateur may often profitably adapt one intended for other purposes. For instance, there are frequently various forms and sizes of flat rectangular baking dishes to be obtained at oil shops and hardware stores at prices far below that of ordinary porcelain or vulcanite. The writer has one of such before him which just takes a half-plate. The cost of this, made in tin, was twopence-halfpenny. A farthing's worth of paint will make it for many purposes quite as serviceable as one costing three times the price.

As a further instance of the way various articles can be utilised in the interest of economy, at a recent demonstration on enlarging, some 15 by 12 bromide prints operated upon were, after development, acidified in a red enamelled tea-tray costing fourpence-halfpenny. A porcelain tray sufficiently large would run into five or six shillings.

What is oft-times a very convenient makeshift is to employ the ordinary cardboard boxes in which dry plates are usually sold. In order to do this, the porous cardboard must, of course, be rendered impervious to liquid. Various means of accomplishing this may be adopted, each particular method having its advantages and also its disadvantages. The simplest procedure of all is to saturate the cardboard tray with wax or grease.

A piece of ordinary composite candle, or the grease from a child's night-light, is melted, the box to be operated upon is warmed, the melted grease is run into it and caused to saturate all parts of the inside. As soon as it is cold, which will be a matter of seconds, the dish may be used. The above is so primitive a procedure that little surprise will be felt by the reader on being told that in use such a dish is none too satisfactory. Many of the solutions are apt to attack the grease, the acid ones least of all. Moreover, unless carefully handled, the dish is very short-lived, the corners giving out very easily. Still, this employment of grease is often a most convenient expedient. It takes but little time, and the materials are always available.

In a recent number of the AMATEUR PHOTOGRAPHER, paraffin wax for waterproofing cardboard dishes was advocated in the following terms: "Cut some paraffin wax into pieces the size of a nut, place on bottom of dish, and by means of a flat iron, used hot, but not too hot, melt them, and work the wax into corners and bottom; repeat this three times. Be careful not to scratch the dishes when in use" ("Aletes," p. 460, vol. xii.)

There are several other far more durable preparations available, which are better than either of the two foregoing, but which have the drawback of not being so easily procured nor so simply applied. First of these is the following: Heat coal-tar in bain-marie to 100 deg. F.; to this add the best vulcanised rubber in shreds, in such quantity that when dissolved the resulting mixture shall be of the consistency of thick treacle. A very similar preparation to the above is that which goes by the name of Brunswick

black, which probably contains wood-naphtha and coal-tar. The above will stand acids, ferrous oxalate solution, and weak alkalies.

Another useful and always available article is what is known as sealing-wax varnish. This is made by breaking a stick of good-quality red wax and covering the pieces, previously placed in a bottle, with methylated spirits; in a short time the wax will be found to have got quite soft. The bottle being now well shaken, the wax becomes thoroughly incorporated with the spirit. On applying the mixture to cardboard, wood, glass, etc., the alcohol speedily evaporates, leaving a thin film of sealing wax adhering to the material operated upon. There are two main objections to this varnish; in the first place it is apt to crack and either scale, or allow a leakage; secondly, all solutions containing alcohol, ether, chloroform, or similarly acting solvent would attack the wax. But in spite of these weak points, the above is a most useful and handy preparation for the worker to have by him; it will keep almost indefinitely in a well-corked bottle.

Perhaps the best solution for making a dish water-tight is the following:—

Asphaltum .. .. .	4 oz.
Mineral naphtha .. .. .	10 „
India-rubber solution .. .. .	4 drm.

The rubber solution referred to is that used by cyclists to repair their tires. Those who prefer can make the solution for themselves, as follows:—

India-rubber .. .. .	1 drm.
Mineral naphtha .. .. .	1 oz.

Dissolve the former in the latter.

It is here necessary to give a serious caution to all who contemplate using the foregoing formulæ, inasmuch as mineral naphtha throws off a highly inflammable and dangerous vapour; certainly no light should be in the same room where the naphtha is being manipulated. It will be within the memory of our readers that the disastrously fatal fire near Smithfield was caused by the careless use of the above compound.

The mixture when the ingredients have been well incorporated may be applied by means of a brush or floated over the article it is desired to coat. The amateur need not, of course, confine his attention to utilising old plate-boxes, but avail himself of any cardboard box lids which he can lay hands on, these may be procured for the asking at any draper's or fancy shop. For large sizes, wooden box lids can, with a little ingenuity in stopping the cracks where the pieces join, be most successfully coated with the above, and will result in the production of very serviceable trays.

The hints we have given by no means exhaust the subject, and we may in a subsequent number further supplement them.

## Letters to the Editor.

### THE VIENNA PHOTOGRAPHIC EXHIBITION.

SIR,—In the AMATEUR PHOTOGRAPHER for January 2nd I find an anonymous letter. This communication is calculated to discredit our this year's exhibition, while attacking that of the year 1888.

Under other circumstances I should not answer such an attack, but naturally, Sir, we are by no means indifferent as to your opinion of our doings. Further, we desire to convince you and all English professionals and amateurs that our exhibitions are based upon a firm foundation. This year our exhibition will be confined to strictly artistic pictures, and is intended to show whether photography has an artistic side at all or not, and also how far at present photography has advanced in regard to picturesque effect and artistic conception.

Photography, which hitherto has always been regarded by



painters with an evil eye, they altogether denying the possibility of artistic effect in it; photography, I say, has recently (in no slight degree, through the influence of amateurs) assumed a more artistic tendency, and the Club of Amateur Photographers in Vienna, inspired with the thought of proving the possibility of artistic work, issued the invitation to take part in an exhibition founded on the above-mentioned idea. It was impossible that jurors who are themselves photographers should declare the proof that the exhibition is intended to bring simply and solely because that would be judging of their own hobby or profession. In order to get an incontestable opinion on the point, it was necessary to choose as jurymen only artists, *i.e.*, painters, etc., as they alone, as opponents of photography on principle, seemed called to pronounce on the possibility of art in photography.

Thanks to the indefatigable efforts of Imperial Councillor Professor Fritz Luckhardt, the club has succeeded in forming a jury of painters, etc., who will do their duty most conscientiously, and who are free from prejudice for or against photography.

Professor Luckhardt, himself an eminent photographer, was chosen for the purpose of explaining certain appearances caused by the nature of photography itself. On the jury he will be a technical adviser, and is certainly a person to inspire every amateur and professional of whatsoever country with the fullest confidence. It is self-evident that, in judging the pictures, the artistic idea, the conception, the posture, etc., will be determinative. That our exhibition programme does not contain the demand that the exhibitor should be the producer of the picture, merely proves that from the very first we deemed this a matter of course.

Experience and the most extensive technical knowledge must go hand in hand with artistic perception to achieve what is called art in photography, and, therefore, we almost feel ashamed of asking the competitor how much of it he has done himself; but, nevertheless, have determined to do so.

In this sense we understood our programme, and considered a passage requiring an express declaration as to how much of the work the exhibitor himself has done as a degradation, nay, well nigh as an insult for amateur and professional alike.

Your correspondent seems only to desire to wilfully distort a slip of the pen in the German circular. Another assertion of his, namely, that the Exhibition was planned to exclude professionals, is not correct; for the English programme (the first to be printed and sent out) does not contain any such passage, nor was such a thing mentioned by the Exhibition Committee. The English programme is headed "International Photographic Exhibition, etc.," which wording clearly proves there was no intention of excluding the work of professionals.

But the accusations against our exhibition of 1888 I emphatically declare to be untrue, for it will not do for men who hold the first position here as photographers, and who belonged to the jury then, men such as Professor Dr. Eder, Professor Luckhardt, Government Councillor Volkmer, etc., to be accused of partiality.

To your correspondent's quoting the well-known American amateur, Mr. Stieglitz, as a judge of Continental affairs, I raise no objection, for a lengthened stay here fits him for it.

A letter just to hand, dated New York, December 8th, 1890, says of our exhibition, "I congratulate you on the jury; it pleases me. The exhibition will doubtless be one of the most important."

To bring this last about is not in our power, but in that of the exhibitors.

Hoping that nothing may mar the harmony which has hitherto existed between English editors, amateurs, and professionals on the one hand, and Austrian disciples of Daguerre on the other, I am, Sir, yours truly,

CHAS. SERNA (President).

Club of Amateur Photographers, Vienna,  
January, 1891.

\* \* \* \*

#### EDINBURGH EXHIBITION.

SIR,—In your report, January 9th, of the Edinburgh Exhibition, your district editor is very severe on the silver-medal picture in Class XX. In his opinion, it is "by no means a pleasing picture, being hard and unfeeling in tone," but he further adds, however, that the jurors' decision is "in all respects" superior to his. May I say that the decision of the jurors has only confirmed the opinion of the first seascape painters of the day, Mr. Henry

Moore, A.R.A., who considers the picture in question one of the finest he has ever seen. As to not having sent in the original negative, if the enlargement was in all respects worthy the first place it would show very little nobility on the part of the jurors to withhold the medal for so small an oversight. But the original was sent in with the enlargement. The fault was not mine.—Faithfully yours,

F. H. WORSLEY-BENISON.

\* \* \* \*

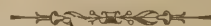
#### PHOTOGRAPHIC TONALITY.

SIR,—I should not have troubled you again on this subject but for the letter in your last issue, from which it would seem that, however many hours your correspondent may spend each week in perusing the AMATEUR PHOTOGRAPHER, he either devoted a very small fraction of his time to Mr. Buck's article and my letter, or, as is very likely, we have not made ourselves sufficiently explicit. In order to remedy this defect, let me begin by assuring "Gradation" that the question is not, as he seems to think, primarily one of slow *v.* fast development, on which footing alone he treats it, but of reducer *v.* alkali. To show that "Gradation" has been, if he will permit me to say so, somewhat careless in arranging his data, I have merely to point to his eulogium (a thoroughly well deserved one, by-the-by) of your formula for snow scenes, by which he plays my hand for me. Had he referred to the formula he would have seen that although the alkali is present in full strength, *i.e.*, about the usual proportion to the ounce of solution, the pyro, on the contrary, is reduced to 1/15th or even 1/20th of the ordinary amount to start with. So that a development with strong alkali and weak reducer need not be a fast one. Now I will ask "Gradation" a question. Has it ever occurred to him that during the time a plate is being exposed, there arrives a moment when the worst lighted details are sufficiently impressed upon the film? Well, then, that is the moment of correct exposure. Now there can be no doubt that anything short of or beyond this is detrimental. I also maintain that for every make of plate, the normal developer is adjusted to suit this absolutely correct timing, so that any tampering with the constituents will spoil the gradation of a plate exposed in this manner. Now does "Gradation" see what Mr. Buck and myself meant by "cutting exposure short," just sufficient," etc.? Your correspondent ignores correct timing. He can think of nothing but under and over exposure! Should these things be? Why detract from the beauty of many properly timed plates, because, forsooth, you are afraid you may have over-exposed? This system of long timing is the curse of the day. For my part, I have suffered so much from it that I would sooner run the risk of spoiling six plates by under-exposure for the sake of one correct and technically perfect negative, than I would have all the seven over-exposed, made presentable (or even good) but not what they should have been. I am far from believing in slow development; for instance, the snow scene formula has yielded me a splendid negative where there was great range of distance and contrast, even without snow. I have also done very well with the "building-up system" used by the Rev. Mr. Hare in his silver medal pictures in 1885. In the latter, the pyro and ammonia are each divided into three equal parts. You commence with one-third of each and add the remainder, in the case of correct exposure, by equal thirds till you arrive at the normal strength. This is a capital method in cases of uncertainty, as errors can easily be corrected and the first application contains only the proper proportion of pyro to ammonia. But I say again, away with the system of starting with full strength pyro and weak alkali, except in two cases—over-exposure, or where the subject is one on which for my part I should never dream of wasting a plate, *viz.*, a flat, dull, uninteresting view with no contrast even to the eye, and consequently no beauty. Contrast, even violent contrast, is of the very essence of artistic work, but not exaggerated, as "Gradation" would have it.—Yours, etc.,

ISIS.

SIR,—Through serious family sorrow, I am unable now to reply to "Gradation's" letter, but will gladly do so as soon as possible.—Yours faithfully,

THOS. L. BUCK.



**Circulating Photographic Club.**—Mr. J. T. Cook, of Edina, Stoney-gate, Leicester, wishes us to state that he has a vacancy for one member in a Circulating Photographic Club of which he is Secretary, and will be glad to hear of anyone desirous of joining.



## The Construction and Use of Photographic Lenses.

BY CLEMENT J. LEAPER, F.C.S.,

*Instructor in Photography, City of Dublin Technical Schools.*

### CHAPTER II.

#### THE GRINDING OF A LENS.

To effect this, the edges of the flat surface of the glass disc, as supplied by the manufacturer, are gradually ground down by pressing the disc against an iron tool having a radius of curvature equal to the lens, both surfaces being supplied with emery and water; and the glass having been thus brought to the requisite form, is finally polished as highly as possible.

The plant required to carry out lens-grinding consists of a lathe, grinding patterns, emery, pitch, putty powder, and sheet brass.

Patterns in boxwood are first turned to the approximate curve of each surface, a pair being made for each side of the lens, viz., a concave or hollowed-out pattern and a convex or sphere-like pattern fitting into it. It follows from this that four patterns are required for each lens.

These patterns are next handed to the iron founder with instructions to make malleable iron castings of approximately the same form, and these rough castings are then brought to exactly the same curvative as the lens itself.

To carry this out, a piece of sheet brass is flattened, and the arc of a circle of the same radius as that of one surface of the lens is traced on it. The brass is then very carefully cut along the line, and the two patterns so obtained are worked into one another with emery and water until they exactly fit. The hollow or concave iron casting having been chucked in the lathe, the depression is smoothed out in the usual way, the convex brass pattern being applied to it from time to time to see if the work is progressing satisfactorily. The convex iron casting is then similarly treated, the concave brass pattern being employed to test the correctness of the curve. Finally, the concave and convex castings are ground one into the other until they fit.

The emery employed in the preliminary grinding is what is known as "coarse forty hole," and after having been used, as will be described further on, the residue is put in a beaker with water, and stirred up. After settling for half a minute, the water carrying the finer particles in suspension is poured into another vessel, and after settling therein for one minute, the liquid is poured into a third vessel, in which it is permitted to settle for five minutes, the operation being repeated at intervals of ten, twenty, and sixty minutes. By this means emery of seven grades of fineness will be obtained and of much more uniform quality than that procurable commercially.

To grind the patterns into each other, one of them is screwed to a flange fixed to a post about 3 ft. 6 in. high, and a little of "forty hole" emery spread over it with the fingers. The other pattern is then worked over it, the working being always spirally towards the edge so as to carry away any grit or dirt.

The patterns are then cleaned out, and the working repeated with successive grades of emery until the patterns are quite bright and an accurate fit.

The patterns should be a little larger than the lens to be ground, otherwise the surface of the margins of the lens would not be spherical.

The patterns being ready, a circle half an inch larger than the lens is to be cut from the glass disc, and one side of this disc having been attached with a little melted pitch to a stout brass plate, the other side is worked circularly with coarse emery over the pattern until it approximately fits it.

To do this the disc fixed to its plate is taken in the right hand, and moved about in the patterns six times in a circle and two or three times in different directions. Great care must be taken in doing this not to use undue pressure, never to go beyond the edge of the pattern, and to keep the emery damp.

When the glass touches all points on the surface of the pattern, the emery is changed for finer and finer kinds, and the smoothing continued until all lines and markings have disappeared.

As the shape of the pattern is changed somewhat by the grinding, it is necessary from time to time to bring it back to its original form by applying the pattern of opposite curvature to it and grinding the two together.

To see if the lens is fit for polishing, the surface must be very carefully examined with a magnifier, and if any scratches are noticed the entire operation must be repeated.

Assuming that one side of the lens is ready for polishing, the disc is detached from the brass support and another piece of brass turned in the lathe to approximately the curve of the face just finished. In this the curved face is cemented with melted pitch, and the series of operations repeated for the other face, using another tool corresponding to the second radius of curvature.

To polish the lens, a piece of very fine woollen cloth, three-quarters of the diameter of the lens, and the length of the pattern, is cemented to the latter with a very little pitch dissolved in turpentine. Some very fine putty powder is moistened and rubbed into the cloth, and the lens, held very firmly and quite flat, is moved to and fro over this, giving the lens at the same time a movement of rotation after each stroke. By repeating this operation for from two to six hours, the opalescent appearance left by the emery will gradually disappear. When finished, the surface should be quite smooth, free from scratches, and reflect light brilliantly.

The final operation consists in centering. To do this, a hollowed-out piece of wood is chucked in the lathe, and the lens fixed to it with a layer of pitch, both surfaces being slightly warmed to cause them to adhere. A candle flame is then placed at about three feet in front of the lens, on looking at which two images of the candle flame, one erect and the other inverted, will be seen. If on slowly rotating the lens these images remain stationary, then the lens is centrally placed with reference to the axis of rotation of the lathe; if they move up and down, the lens is not centered. In the latter case the lens is moved in the soft pitch until the desired result is attained. When this is done, very cold water is poured over the pitch to harden it, and the edges of the lens are cut down so that the axis of revolution of the lathe is the centre of the circumference of the lens.

To effect this, a piece of wood capable of up and down motion is fixed in the slide rest, the upper edge of the wood being faced with copper. This edge is then brought in position beneath the lens, and gradually raised until it touches the margin. The lens being meanwhile caused to revolve, and both surfaces being supplied with emery and water, the circumference will be gradually ground down, and when this has taken place evenly all round, the operation is complete.

Generally speaking, a pair of lenses are cemented together with Canada balsam. To do this, the concave surface of one of the lenses is gently heated, and a little balsam put upon it. The convex and corresponding surface of the other lens, having also been slightly warmed, is then pressed in contact so as to squeeze out the excess of balsam, the two surfaces being meanwhile moved over each other so that their axes coincide.

The final mounting in a brass tube does not call for any detailed description.



## Studies in Art for Photographers.

BY REV. F. C. LAMBERT, M.A.

### CHAPTER I.

A VERY slight knowledge of any language soon leads us to the conclusion that what at first seems nothing better than a hopeless confusion is capable of being considerably simplified as soon as a few general principles are observed. And, although these rules of syntax, etc., are observed again and again to vary, yet the variations are either very slight or are attributable to some systematic disturbing element.

It is only in comparatively recent years that any serious attempt has been made to discover and formulate a logical basis for the grammatical rules and forms of language.

Up to the present time I have failed to find any work which attempts to find a logical, scientific, or any sort of explanation as to why certain forms, arrangements of masses, grouping of colours, etc., give us satisfactory sensations, and why others are not so agreeable.

Whether this has been done I know not, but there is no reason why it should not be attempted. Possibly at this very early stage of our art studies, any further enquiry in this direction would fail to interest. But I will ask my readers to bear in mind from the first this one idea, viz., if so many different workers in art, in the majority of cases quite unknown to and independent of each other, have usually selected from nature similar arrangements of parts, disposition of mass, etc., in preference to any other, or in preference to "taking things as they come," it cannot be unreasonable for us to suppose that there must be a reason of some sort for this similarity.

Before we enter upon any detailed reference to the grammar rules of art language, it will be as well that we come to some general agreement as to what we mean by such words as laws, rules, etc., when we are free to choose for ourselves. Once again we may refer to spoken language. I make no secret of my entire ignorance of, say, the Hottentot language. But I will make bold to guess that those who have studied that (or any other spoken) language will tell me that the native Hottentot, quite unconsciously to himself, follows certain general arrangements of the parts of his sentence, that his fellow men use the same arrangement, and that experience shows that any great divergence from this general arrangement detracts from rather than adds to the force and vigour of what he has to say. In some such sense artists, quite apart from any imitation, find themselves best able to express their pictorial ideas by following certain general methods of selection, and arrangements of parts. We are pleased to apply the term rule, law, or canon of art to express the general custom of those who are best able to express their thoughts to us by means of their craft.

A poet or a musician will now and again boldly fashion a new sequence of words, or strike a strange chord of sounds, when the exigencies of the case require some such exceptional treatment—but unless it be done for a purpose of sufficient importance to justify divergence from the accepted usage, his compeers will be more disposed to accredit him with eccentricity rather than ability.

Another matter must be also kept in mind during the course of our joint studies, viz., that although we may be speaking of this or that rule or method being used, by no means must it be concluded that the worker sets himself the task of doing this or that according to rule. Rather may we say that, having regard to the work in hand, he found that he could best treat his subject in such and such a way, and it is *we* who observe that he saw fit to use a method similar to some other worker. This is not a

difference without a distinction. On the contrary, it is a point worthy of careful notice, and for this reason, viz., that if we set about making a picture as we would a pudding—*i.e.*, by following a certain recipe or code of rules—we may perhaps succeed fairly well with the pudding, but I have serious doubt as to the success of the picture. In speaking or writing we do not say to ourselves "remember the rule of relative pronouns! forget not the verb and its subject!" but, following rather the pleasanter course of reading our best writers and thinking their thoughts, we presently learn to find utterance of our thoughts in the sentences and phrases unconsciously snatched from those whose word painting clings to the eye or the ear.

So precisely may we, by studying the best works of the best workers, gradually find ourselves using ways and methods which the experience of our elders has tried and approved.

The object of these hints is not to create or set out this or that code of rules, and then say to the photographer, "Here is a recipe, follow it, and art is yours," but rather to say that fairly intelligent examination of those pictures, which most men agree in pronouncing noteworthy, shows certain methods and arrangements more or less common to all the workers. These methods have, at any rate, something like a consensus of opinion and practice to support them. Therefore until we can find more direct or more powerful ways of expressing our thoughts we shall be unwise to ignore the results of collective experience. It is not a wise proceeding to kick over the ladder until we are safely landed at the top, or, at any rate, have found something as good or better to hold on to.

It has been argued again and again that rules of art, study of composition, etc., are each and all quite unnecessary, conventional. Once again we will drag in our language simile (which by this time is almost worn to a skeleton with much rough usage). If a man is to make himself "understood of the people" he must be so far conventional as to use words known to his hearers, and to arrange them in sentences somewhat after the manner of his countrymen. It is in no way forgotten or ignored that true art is founded on nature, nor must it be forgotten at any time that true art is not simply repeated nature. Selection and arrangement are the very breath of graphic art, as ideas are the soul of all language, be it language, of words, of music, painting, sculpture, or the drama. Sir Thomas Browne has said, "Nature is not at variance with art, nor art with nature. Art is the perfection of nature. Nature hath made one world and art another. In brief, all things are artificial, for nature is the art of God."

It is manifestly out of our province just now to take any account of the various *isms* of the day, beyond saying that wholesale reformers are seldom wholly in the right, although they may not be wholly in the wrong. But for the exponents of any *ism* to claim that the sum total of past experience is utterly wrong, and that their particular *ism* is the seed of perfection is on their part a cruel act, *i.e.*, placing us on the horns of a dilemma; for their first claim is too bad to be true, and the second is too good to be true.

Until we can have the second without the first we may more wisely follow in our fathers' footsteps—on the one hand, assuring ourselves that if we fail to see merit in those works which are honoured by the majority of sober men, the fault lies with us rather than these works; on the other hand, giving every dutiful attention to those whose appreciation of these works has gone hand in hand with a world's esteem.

Bulwer Lytton had no particular *ism* in view when he penned these words, "Art is the effort of man to express the ideas which Nature suggests to him of a power above



Nature, whether that power be within the recess of his own being or in the great First Cause of which Nature, like himself, is but the effect."



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XI.

THE SENSITIVE PLATE UPON WHICH THE IMAGE IS TO BE IMPRESSED BY LIGHT.

#### II.—THE SUBSTANCE SENSITIVE TO LIGHT.

*Influence of Light upon Matter.*—It is probable that every kind of matter is more or less affected by light; but upon most substances the action of this physical force is so slow, or concealed, that we do not notice any change, or if a change be noticed, it is not assigned to its true cause.

When a lady returns from "a run on the beach" in June sunshine, with a bronzed skin and faded ribbons, she assigns these phenomena rightly enough to the vigorous radiations from the solar orb, which have added colour to her epidermis and subtracted it from the aniline dye in the silk; but the photographer who grumbles that the plate-maker is "sending plates of only half the rapidity I had from him formerly," is often slow to recognise the fact that it is to a chemical change (produced by sunlight) in the glass forming the roof of his studio, that the longer exposures he has been forced to give are due. Attention was forcibly drawn to this matter by Mr. Gaffield more than twenty years ago, when he pointed out that the oxide of manganese which is commonly used to correct the green colour of ordinary glass, itself becomes pink under the long-continued action of light. Almost any sheet of window-glass which is removed after long use will show, when carefully examined, a decided coloration, as compared with the margins, which have been protected from light by the rabbet. Sometimes the action of light is to *print* a distinct copy of any picture long exposed in contact with glass, upon the vitreous material. We once saw a remarkable example of this kind exhibited by Mr. George Mason, of Glasgow.

As early as the commencement of the Christian era, we find Pliny stating the fact that yellow wax was bleached by the action of light; and both Greeks and Romans knew well that certain precious stones, and almost all paintings, suffered change by long-exposure to sunlight.

#### *Both Physical and Chemical Changes Produced by Light.*

—Some of the effects produced by light upon matter are of a purely physical nature; the substance suffering change in certain of its properties, but remaining of the same chemical composition. Thus ordinary yellow phosphorus turns red in sunlight; sulphur dissolved in carbon bisulphide becomes insoluble, and settles on the sides of the bottle in which its solution has been exposed to light. These two elements undergo a physical change only.

But in most cases the light produces a *chemical* change in the matter upon which it acts. The ferric oxalate with which the paper used in the platinotype process is coated, loses some of its oxygen when exposed to light, and is reduced to ferrous oxalate; these two substances constituting the faint image which is seen when such paper is removed from the printing frame.

A mixture of hydrogen gas and chlorine gas explodes when exposed to sunlight, the result being the formation of the compound gas called hydrochloric acid.

In every large laboratory there is a special "dark cupboard" reserved for substances—such as certain compounds

of mercury, copper, chromium, lead, etc.—which are well known to be affected and changed by exposure to light.

*Certain Silver Compounds most Sensitive to Light.*—For our special purpose—the securing of photographs in the fraction of a second—we must find substances which are not merely affected by light, but which are acted on by it "instantaneously."

For this purpose all research has shown that certain compounds of the metal silver with the three non-metallic elements, chlorine, iodine, and bromine (called collectively the *halogens*) far surpass every other known substance.

*Silver Nitrate* (commonly called *lunar caustic* by surgeons) is a compound of silver, nitrogen, and oxygen; its chemical formula being  $\text{AgNO}_3$ . That famous alchemist, Albertus Magnus, who flourished in the thirteenth century, mentions that the skin turns black when rubbed with this substance. For certain diseases silver nitrate is or was the only remedy. But the skin of the unlucky patients who are obliged to imbibe this drug soon becomes discoloured—of a bluish-black tint—or it gets into the outer tissues of the body and is affected by light.

Readers of Wilkie Collins' powerful novel "Poor Miss Finch" will remember the great use he makes of this fact.

The very first experiments ever performed in photography were done by the aid of silver nitrate. Schulze used it in 1727, and Thomas Wedgwood about 1790 to 1800, in the way we have already described. But although silver nitrate blackens slowly when spread upon paper, or mixed with an organic substance, and exposed to light, it is not nearly sensitive enough for direct photographic processes. But as a means of producing other and more sensitive compounds of silver, the nitrate is invaluable, and tons of it are used every year by the plate-makers. The pure or *recrystallised* silver nitrate must be employed.

*Sensitiveness to Light of Silver Chloride.*—Every molecule of the white solid called chloride of silver contains two atoms, one of silver and one of chlorine; chemists, therefore, write its formula, shortly,  $\text{AgCl}$ .\* Masses of silver chloride occur as a mineral in certain rocks; and the substance in this state is known to miners as *horn-silver*, from its waxy, translucent appearances. Horn-silver is found in the Hartz mountains of Germany, and it appears that the miners of this district noticed that the lumps of horn-silver blackened or became discoloured on the outside when they were brought out of the dark mine into sunlight. The old German alchemist, Fabricius, recorded this fact about the year 1556.

Just two centuries later, an Italian—Professor Beccarius, of Turin—noted that silver chloride which had been produced artificially (as by the mixture of solutions of common salt and silver nitrate) was changed in hue from white to violet and brown, by exposure to the sun's rays.

In 1802 our great English chemist, Davy, remarked that paper, or leather, coated with silver chloride, was more sensitive to light than the same material coated with silver nitrate.

*Light, Unaided, cannot Act Photographically.*—Perfectly dry silver chloride placed in a glass tube from which the air has been removed is *wholly unaffected by light*. But if a drop of mercury be placed in the same tube, the silver chloride speedily darkens in sunlight. How is this? It means that light is not able, unassisted, to separate the two elements (the silver from the chlorine) of which the silver chloride is composed. But the mercury pulls or attracts the chlorine, and with its aid the light is able to effect the decomposition. We may, therefore, style the mercury a *sensitiser*, since it makes the silver salt sensitive to light.

\* *Argentum* is the Latin name for silver, whence  $\text{Ag}$  = Silver.



Under ordinary conditions the moisture always present, and the paper, etc., upon which the silver salts are spread, act as weak sensitizers, and enable light to effect a decomposition or separation of the metal from the non-metal, altogether or in part.

*Talbot Discovers the Use of Silver Nitrate as a Sensitizer.*—Fifty years ago nothing was, of course, known as to this need for the presence of a "sensitizer." But, somewhere about the year 1837, Henry Fox Talbot found that by having a *slight excess* of silver nitrate upon a sheet of paper coated with silver chloride, the sensitiveness of the latter substance to light was increased a hundred-fold.

(To be continued.)

## Photographic References.

BY MAJOR J. FORTUNÉ NOTT.

### FOCUSSING.

(Continued from page 28.)

ATTENTION has already been drawn to the fact that every camera intended for all-round work should be so constructed that the back frame can be given a vertical swing. This is a most important movement in focussing, and in a somewhat lesser degree so is the movement known as the horizontal swing, for it is one to which frequent resort has to be made by skilled photographers. But better advice we consider cannot be given to any one who is only just mastering the rudimentary details of photographic manipulation than to recommend him to work without resorting to the use of these movements, and at first to confine himself to focussing as well as he can with the back fixed in its ordinary place, taking care, of course, to see that it is in the correct vertical position that will keep all lines in natural perspective.

There are, however, frequent occasions when the vertical swing must be used, especially when photographs of architectural subjects are required, for in order to get in elevated parts of the buildings, it becomes necessary now and again to give the camera a slight upward tilt which it can at once be seen causes the perpendicular lines to converge. Now, by a judicious movement of the back the ground-glass screen can be brought into a position wherein the convergence produced by the tilt given to the camera is entirely overcome. Or, again, in portraiture or in outdoor work where any object in the near foreground slopes towards or away from the camera, so that its various parts are not equally distant from the ground-glass screen, and therefore cannot be brought under ordinary conditions into the same focus. While reliance should be placed wherever possible upon the stops to overcome as far as it is desirable this awkward difficulty in focussing, nevertheless resort may be necessary to the conveniences of the swing-back, and it therefore behoves the photographer to thoroughly understand its manipulation and the effects produced by its movement.

Its use can easily be discovered by giving the subject some careful thought. As the rays of light from all objects in the field of view must be of equal length to be in identically the same focus, it follows when they are not in the same plane, and a sharp definition is required, that by a proportionately equivalent swing being given the ground-glass screen when its central part is in correct focus—so that the portion reflecting the image of the nearest object is slightly removed and the opposite part whereon the image is represented of the most distant part of the building or sitter is brought nearer—an equalisation of the length of rays at the

extreme points to those impinging on the plate from the central points is accomplished. This rule, it can be seen, applies equally to cases wherein this approaching or receding of the planes of the picture result from the tilting of the camera and in this way destroying the parallel that should exist between the object, say a building and the ground-glass screen.

The rules governing these movements apply almost equally to both the horizontal and the vertical swing, for the one is applicable to cases in which the upright lines of the picture are not in correct parallelism with the axis of the lens, and the other where the horizontal lines approach or recede in too sharp a manner for any correct focus to be obtained without the aid of a corresponding swing being given to the focussing screen.

It has already been pointed out that the swing in the back of a camera should be from the centre, the construction giving a somewhat similar movement in one direction to that to be seen in an ordinary toilet mirror. When this is not provided for, the correct adjustment can only be made in a tentative way, inasmuch as the centre of the plate where the focussing point is situated is affected when the back is swung in either direction, and in order to obtain the correct adjustment a series of experimental movements have to be made, as no correct point exists for comparison. In very few forms of portable cameras made in England can these movements of the swing-back be performed in the most perfectly satisfactory manner. They should be as easily controlled as the focussing adjustments of the lens, and in the perfect camera of the future this will be provided for.

In some forms of camera a movement is provided whereby the front part holding the lens can be given a vertical swing. This is very rarely necessary, but may now and again be used by a very skilled operator. By its use the front can be moved into a parallel position with the back after it has been swung, with a similar result to that produced by an extended rising of the front.

It must not be forgotten when the employment of the swing-back is considered desirable, in order to bring different planes of the picture into focus, that a small stop introduced into the lens will frequently accomplish the desired result, and this method of doing the work when the increased exposure it necessitates is possible, is the one that should always be preferred. The other method, a very few experiments can soon demonstrate, produces distortion, owing to the shortening or lengthening of the oblique lines. The perspective is falsified and the whole scene is given that defect artists recognise as being out of drawing. This defect in some instances can totally destroy the value of an otherwise perfect photograph, for, instead of conveying an idea or impression of truth, the scene is converted into a caricature. The peculiar effect an excessive amount of swing can create becomes painfully apparent if a close view of an animal, say a horse or a cow, is taken from a position in which the animal is almost facing the camera, and the swing is used to bring the tail and the head into focus. The distorted picture resulting from this method of procedure can have but one useful feature about it, the practical object lesson to be gained from its careful scrutiny.

In concluding this part of the subject we wish to draw attention to the following features in connection with this important matter of focussing. It is often better to get the principal objects in the picture smaller than desired if the use of the swing-back, or other dodges to procure correct definition, can in this way be obviated, and to trust to a subsequent process, known as enlarging, to give size to the picture. It is, therefore, better to work the lens at its focal distance whenever possible, and if lenses of different focal



lengths are procured, this method of procedure can easily be adopted, for the lens can be suited to the scene. The following table gives the distances at which all objects are in their best focus when the optical centre of the lens is fixed at its correct focal position with respect to the ground-glass screen :—

Focal Length of Lens.	Distance at which Objects become in Focus.		
6	..	..	90 ft. 6 in.
7	..	..	140 " 7 "
8	..	..	160 " 8 "
9	..	..	180 " 9 "
10	..	..	200 " 10 "
11	..	..	220 " 11 "
12	..	..	241 " "
13	..	..	326 " 1 "
14	..	..	351 " 2 "
15	..	..	376 " 3 "
16	..	..	402 " "

These measurements have been calculated from the "Tables of Conjugate Foci," by Mr. J. R. Gotz, and are made for lenses working with full apertures; of course, by the use of stops different planes of the picture can be brought into an equally effective focus as those in the central parts of the field of view when seen with the open lens.

(To be continued.)



## The Stereoscope.—XVI.

BY VALENTINE BLANCHARD.

THE Graphoscope is an instrument tolerably well known, and is much more frequently seen than the ordinary stereoscope. The reason for this is not very far to seek. It serves a two-fold purpose. It is a compact little easel for the exhibition of photographs of moderate size, and is furnished with a large magnifying lens; but it is a stereoscope as well, as will be seen by an examination of fig. 15. When used as a stereoscope, the large lens, which is arranged to readily slide up and down the two brass rods which support it, is neatly folded away underneath. The diagram shows the instrument arranged as a stereoscope, but a close inspection will reveal the rods hinged at their base, and carrying the large lens which is snugly stowed away below the base-board.

The Graphoscope, unfortunately, is very rarely seen as shown in the illustration. The demand for the stereoscopic portion is so slight that it is generally folded down out of the way, and the brass rods, with their burden, are uppermost, and a cabinet portrait of some pet celebrity is usually in position on the easel ready to be looked at.

In view of the probable demands on the stereoscopic portions of the instrument, which the rapidly-increasing revival of the stereoscope is likely to bring about, I have thought it expedient to make a drawing of the Graphoscope for ready reference, as without doubt only a few slight alterations in construction would make it readily available for viewing stereoscopic pictures much larger than those usually produced.

Let us now proceed to examine the improvements really needed. To begin with, the hood to the eye-piece, as shown on the Holmes stereoscôpe, in fig. 14, page 29, is an absolute necessity, for no stereoscope can be regarded as complete without this addition. Secondly, the eye-piece should be made to slide up and down, and would only need an arrangement of rods similar to that employed to carry the large magnifying glass, but could be hinged so as to fall down in front, and it would not then interfere at all with the rods that are made to fold underneath. This is quite

a slight matter of detail, and would give little or no extra trouble to the manufacturer. Thirdly, the easel, with its ledge to support the picture, should be made to slide up and down at will; and, of course, the frame carrying the ground glass should be considerably increased in size so as to make it available for transparencies of much larger proportions than those of the present regulation dimensions.

Reference has already been made to a modern French stereoscope of gigantic proportions, but on the general lines of the American stereoscope so frequently referred to. This instrument was shown by Mr. W. England at one of the technical meetings of the Photographic Society, and attracted considerable attention, both for its peculiar construction and the unusually large photographs shown in it. Some of the pictures were larger than whole-plate; indeed, one slide, a full-length portrait, was not less than ten inches high, though the width was not probably greater than six inches. Still, owing to the length of the focus, they appeared very slightly enlarged. The general opinion

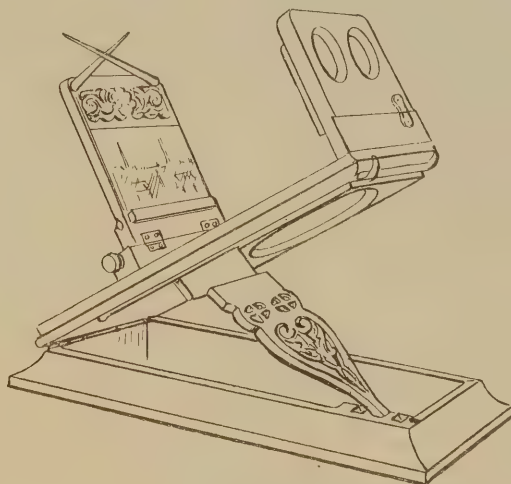


FIG. 15.

expressed at the meeting was that, as the pictures were so slightly magnified, there was no inducement to adopt such a clumsy instrument. There was, however, one clear gain which specially struck me. The defects due to the grain of the paper, or blemishes in the negative, and, more than all, the patent results of over retouching, were so reduced in importance as to be scarcely visible. With short-focus eye-pieces the defects of every kind are painfully apparent. I felt, therefore, the new instrument had at least one distinct advantage over the old-fashioned instruments. Being specially struck with this fact, I determined to make a more careful inspection of the leviathan stereoscope, as it may fairly be called. An opportunity has recently been furnished me through the kindness of Mr. England, and I am now able to give a more complete description of the instrument. There are several points of great novelty about it, and, as the ideal stereoscope is probably in the womb of the future, some amateur mechanic who may read these lines may get an idea from the French instrument to help him on in his efforts to make the perfect one so much desired.

The shape most certainly cannot be recommended, for though it somewhat resembles the American stereoscope on the stand, as shown in fig. 14, still, imagine a machine more than two feet long resting on a slender stand! It looks much more like some deadly instrument of destruction—a Gatling gun, or a new-fashioned mitrailleuse—than such an instrument of peace as the stereoscope. The good points,



however, could easily be incorporated with the best portions of the Graphoscope, and, therefore, it is needless to dwell further upon the form, and to deal instead with those portions worthy more serious consideration.

The eye-piece is distinctly novel. It is made of semi-lenses two inches square, so that the original disc could not have been less than five inches in diameter. The great point of novelty, however, is contained in the fact that there are two sets of semi-lenses, one above the other, making four prisms in all. With the single set the focus is considerably over eighteen inches. The second pair are neatly framed, and made to fit very exactly over the others, and are held in their groove by small buttons. The combination produces a focus of about twelve inches. Only a very dull light was available when I examined the pictures through both single and double prisms, but I saw no trace of a chromatic edge to the outlines anywhere. The arrangement for focussing is very ingenious. The cross-bar which carries the picture is attached to an endless chain, which works in a groove cut in the long bar proceeding from the eye-piece, and is held in position by two spiked wheels, one at each end of the instrument. The wheel nearest the eye-piece has a milled head, in the turning of which the cross-piece is smoothly dragged up and down at will. The spikes fit into the links of the chain, and no effort is required in racking the picture forward or backward. Indeed, there is no jerkiness whatever, and this is more than can be said of most of the American instruments.

A stereoscope of such extensive range is rarely needed, and is not likely, therefore, to be very popular, but, on the other hand, instruments of short focus, besides magnifying every little defect in the picture, undoubtedly tire the eyes much sooner than those of longer focus, and at the same time limit the amount of separation between the pictures. For instance, with a stereoscope under six inches in focus it is difficult to increase the distance between the objects in the two pictures beyond  $3\frac{1}{4}$  inches, whereas with one of eight inches they may be separated to a distance of  $4\frac{1}{4}$  inches without any trouble whatever. I am at present busy with experiments on both whole and semi lenses of various focal lengths, and hope to give the results in the next chapter.

*(To be continued.)*

## Round and about the Clubs.

### THE WEST LONDON PHOTOGRAPHIC SOCIETY.

WHEN one, on either pleasure or duty intent, visits an exhibition of the work of the members of any society, he is prepared, and generally expects, to find the walls covered with "pictures" of varying beauty, with a fair sprinkling of those which may reasonably be described as mediocre. It is only natural to expect that, amongst a large and promiscuous collection of amateur workers in the photographic art, a proportion, greater or less, will be found of those who have not yet become adepts in working or selection, or who will never become so, on the principle that artists, like poets, are born, not made. On these grounds it came as a pleasant surprise to find at a society's exhibition that the great majority of pictures, from the points of view both of selection and treatment, and that few, very few, are of such a character as to be passed over without a second examination.

We must, therefore, congratulate the members of the West London Photographic Society upon the high average of the pictures hung upon the walls of their new premises—the Lecture Hall, Broadway, Hammersmith—at the exhibition recently held. There were several points to be remarked with respect to the exhibition as a whole; the first, and perhaps the most striking, being the almost entire absence of albumenised silver prints; another was the comparatively large number of prints upon home-sensitised paper; another, the taste shown in

mounting and framing the pictures; and yet another, the great fascination which cloud-studies seem to have exercised on many of the exhibitors.

The number of pictures hung was considerable, and it is impossible to do more within the limited space at our disposal than notice a few of them, prefacing our remarks by a statement of the fact that in the competition for which the prints were entered, there was no classification, and that the judges—Messrs. Gale, Wellington, and L. Clark—were at liberty to award medals to such of the pictures as they considered deserving. The first picture we have to notice is a half-plate platinum print, "Hoar Frost," by Mr. J. J. Adams, which was a clever treatment of a somewhat difficult subject. Mr. Chang showed a nice little picture, "The Mansion," which was somewhat poetical, for, to use an hibernicism, all you could see of the mansion was the lodge at the entrance gates. Mr. L. C. Bennett took a bronze medal for a platinum print, "A Nocturne," showing a ship, with a moon just peeping out of dark clouds behind it. He also showed three clever little river and cloud studies—"Below London Bridge;" "After the Storm," another cloud effect; a charming little view, "At Brentford." Mr. J. M. Dickens exhibited three portrait enlargements, which, however, looked suspiciously like enlargements from copies of good cabinet portraits. Mr. G. F. Blackmore's "Work for Daylight Flies" is evidence that he is a disciple of the naturalistic school, whose followers, by the way, do not seem to be very numerous in West London. "Seeking the Shade," by the same gentleman, is a charming little picture—a bit of river with trees on the banks, with cattle standing together in their shade. Mr. Blackmore takes a bronze medal for "Where Duty Calls," which may be described as a somewhat peculiar picture; there is a beach with cliffs at the back, the tide is out, and a boat lies left high and dry by the tide, and men are walking down to it. We devoted some considerable time to the study of this picture, but have not yet been able to decide what it all means. Mr. S. E. Kellow has two pretty little quarter-plate platinum prints of Charlton and Frognall. Mr. T. S. Hazeon and Mr. W. S. Rogers have artistic ideas of very much the same calibre, for both of them send in the same study—three old trees growing together on the bank of a stream, the latter gentleman giving his picture the title of "Companions." The picture, however, is a very pretty one. Mr. Hazeon sends in two flash-light pictures of scenes in a Greek play, which he calls "A Sicilian Idyll," but we cannot congratulate him upon his success with the flash-light. The Hon. Sec., Mr. J. A. Hodges, gets a bronze medal for a platinum print, untitled, giving a river scene, with a cottage on the left; but we think even that is surpassed by a view, "Near Brendon," in which the varying distances, in one of the most charming bits of river scenery we have seen for some time, is admirably rendered. It is a curious coincidence that Dr. J. Harrison Low also shows the same picture.

Mr. Lawley selected the Lake District and Dove-dale as the scene of his labours, with very pleasing results—"The Lion Rock, Dove-dale," particularly good, as was also "Evening Shadows." Mr. W. H. Whittier exercised careful judgment in the selection of his view of "Osterley Park," and Mr. R. Whiting's flower studies—"Lilac Bloom" and "Cherry Blossom"—were all that could be desired. Mr. J. G. England is a careful worker, and gives evidence of considerable taste in his views of a "Canal, near Heston," and "Near Weybridge." Mr. C. Winter takes a bronze medal, and deservedly, for "A Winter Scene"—a curious fact, which is more of a picture than most amateur attempts at such subjects. Mr. H. Selby's little platinum print, "The Distant Sea," which takes a bronze medal, is admirable. The observer stands on a hill top and looks across fields covered with sheaves of corn to the sea in the distance, and the clouds are well in keeping with the subject and choice of view. Mr. J. Wilson, the Hon. Librarian, shows a print on home-sensitised paper for a pinhole negative, "Towing Path, Kew." The result is certainly pinholey.

The silver medal offered by the President for the best picture in the Exhibition was awarded to Mr. C. Whiting for a 15 by 12 print on home-sensitised paper of the "Crypt, Canterbury Cathedral." This point is one of the finest specimens of architectural work we have seen for some time; the exposure and development are all that could be desired, and the printing and toning are admirably suited to the subject. We should much like to know, however, on what grounds the judges awarded it the special medal for the best "picture" in the Exhibition. There is a general impression that composition, or at any rate selection, are



necessary in the formation of a picture, and if that be so, there are certainly several other exhibits which are more in the nature of pictures, cases, we mean in which great care and judgment had to be exercised in the selection of the point of view, and in which a slight variation in the spot chosen would have taken the print out of the rank of pictures and relegated it to that of non-descripts. It is to be regretted that the judges did not by their award mark their sense of the value, the enormous value, of the exercise of artistic taste in photographic productions. Mr. Winter's view of "Bodmin Castle, Sussex," was excellent, but the colour, almost brick-red, spoilt it.

As usual there was a photographic joke at the Exhibition, and it was due to Dr. Low, who produced a platinum print, which consisted of a river view, with the banks and hills in the background in complete darkness, very black clouds above with just a small white rift in the centre, "What we are Coming To." It was understood to be to some extent a caricature of a picture which took a medal some time ago at a great exhibition. Dr. Low took a bronze medal with another platinum print of a charming river and cloud study, "Black or Silver," which is deserving of high praise. "In the Summer Sheen" was another pretty study by the same gentleman.

On the Saturday evening there was an examination of lantern slides sent in for a members' competition, the prizes to be given for the two best pictures. The first prize was secured by Mr. J. E. Kellow, and the second by Mr. J. A. Hodges. There was a good number of visitors, for whom tea, coffee, and cakes were provided, and the Exhibition may be pronounced a decided success. We shall look forward with much pleasure to visiting Hammersmith again on the occasion of another Exhibition.

## Notes from the Edinburgh Centre.

(By our District Editor.)

THE monthly meeting of the Edinburgh Photographic Society was held in Dowell's Rooms, 18, George Street, on the evening of Wednesday, the 14th inst. There was a large attendance, over which the President, Mr. H. J. Blanc, presided. Professor James Hunter, Edinburgh, gave an address on "The Spectrum," with illustrations, the most interesting of which consisted in showing the quality of red glass. One specimen allowed none but the red rays to pass, while another, which was equally red in appearance, allowed a considerable percentage of blue rays to pass, and would, therefore, have been dangerous for a photographer to make use of in the dark-room. Mr. Hunter's explanations were very clear, and his remarks so interesting that the members were unaware of the flight of time, and before he concluded, the time for closing the meeting had arrived. The discussion upon the subject was consequently postponed till the next meeting. A beautiful presentation print of "Tissington Spire, Dovedale," by Mr. R. Keene, of Derby, one of the prize pictures in Class I. in the Exhibition, was on view. The prints were in photo-etching, by Mr. James C. H. Balmain, Edinburgh.

An endeavour is being made to get Mr. Gambier Bolton to favour the Society with an evening during the present session.

Dr. Emerson recently sent a copy of his latest work, "Wild Life on a Tidal Wave," to the Edinburgh Photographic Society, and it is stated that he intends to forward a copy of each of his other works. The Society possesses a few works, and would gladly form them into a library; but, unfortunately, it has not yet been able to secure independent premises. It was hoped there would be a surplus from the exhibition, which would have been handy for some such purpose as the providing of rooms. All such hopes have, however, been dispelled by the financial results of the exhibition.

How it was possible for professional photographers to fulfil their orders, or for amateurs to follow their pastime during the month of December, passes my comprehension, when the quality of the light is considered. There were only seven hours of sunshine out of a possible of 212 in the whole month. On twenty-five days there was no sunshine at all, and on only two days was there more than one hour. One of these days was the 1st, when there were four and half hours, and the other two and a half hours were distributed over the remaining thirty days. Since January came in, the light has greatly improved.

The Faculty of Advocates in Edinburgh, which possesses the finest library in Scotland, has subscribed, in the language of the

report of the curators, published this week, "for an elaborate work entitled 'Animal Locomotion,' which comprises 781 plates, containing more than 20,000 figures of men, women, and children, animals, and birds actively engaged in walking, flying, and other actions which illustrate motion or the play of muscles. The investigation of which this great work is the result was undertaken under the auspices of the University of Pennsylvania by Mr. Eadward Muybridge. It is a work of invaluable service to the art connoisseur, the scientist, the artist, and the student of nature."

If, as stated above, there was difficulty in silver printing in December, on account of the want of sunlight, bromide printing is now, it would appear, having its turn of difficulty, on account of a defect in the gas supply. In consequence of the strike among railway servants, it has been found necessary to reduce the pressure of gas in the city of Edinburgh, in order that less may be consumed, as coal is scarce, and in the *Scotsman* for last Saturday a letter appeared from a firm of photographers complaining that the diminished light had had the effect of spoiling bromide prints which they were producing.

## Exhibitions.

### VENTNOR PHOTOGRAPHIC EXHIBITION.

THE efforts of the Committee who promoted the exhibition at Ventnor have resulted in a very capital collection of photographs. Nearly 300 exhibits are shown. These have all been well arranged in the hall of the Ventnor and Bonchurch Literary and Scientific Institution. The awards made by the judges (Messrs. T. M. Brownrigg, John Fielder, and Dr. Lord) are as follows:—

Class A (series of three portraits). Silver medal, Messrs. Window and Grove, for four well executed portraits in carbon. Bronze medal, W. J. Byrne, for portraits, two, "Joy and Sorrow," attracting considerable attention.

Class B (series of three landscapes). Prizes, *Photographic Reporter* medals. Silver medal, J. P. Gibson, for "A North Country Road," "The Ford," and "Far from the Madding Crowd," all very beautiful examples of Mr. Gibson's admirable work in platinum. Bronze medal, A. Hendrey, for a series of very clever photographs, "A Day in the Fog."

Class C (series of three seascapes). In this class the silver medal is not awarded, the bronze medal going to G. West and Sons, for "Outward Bound; the *Yarana* and the *Melissa*."

Class D (series of three transparencies). C. V. Shadbolt takes the silver medal for six views in the Holy Land, and W. D. Welford the bronze medal for "The Haven of Rest," "Torbay Regatta," and "Harvest Time." There were only three competitors in this class, so that the judges had not much difficulty of selection.

Class E. (series of six stereoscope slides). In this class no awards were made, although there were three entries, and the pictures were of very fair quality.

Class F. (series of six lantern slides). The silver medal was awarded to G. West and Sons for six "yacht racing scenes," and the bronze medal to John Carpenter, for "Flower Studies." Other good slides were exhibited by P. H. Fincham, "Views in the Engadine;" James Dore, "Ships," "Winter," "Cloud Studies," etc.; J. E. Austin, W. D. Welford, C. V. Shadbolt, Edgar G. Lee, and others.

Class G. (enlargements). Silver medal, G. West and Sons, the yacht *Mohawk*. Bronze medal, Stanley Hurst, "Portrait of a Child." Enlargements were also entered by J. P. Gibson, "The Wood Waggon;" Herbert Lea's "Dorothy;" W. Nicholson, "Shanklin Chine," etc., etc.

All the above classes were by the conditions open to professionals or amateurs, with the result that the professionals have secured the bulk of the medals, one firm taking three prizes.

The following classes were open only to amateur photographers:

Class H. (series of three portraits). Silver medal, Shapoor N. Bhedwar, very fine pictures, and well meriting the award. Bronze medal, Alfred Stieglitz, three good portraits, "Marina," "Professor Vogel," and "Ernesto."

Class I. (series of three landscapes). Silver medal, H. Everitt. Bronze medal, Karl Greger, "Arundel Castle," "Ebb-tide," and "Amberley Castle."

Class K. (series of three landscapes). Silver medal, A. R.



Dresser, "A Rough Day," "A Storm," and "On the Zuyder Zee." The two first are old favourites, and are approved and applauded wherever they are shown. The bronze medal was awarded to J. E. Austin for "Off to the Boats," "In the Harbour," and "Setting Sail."

Class L (genre or figure study). In this class S. N. Bhedwar takes the silver medal for "Her First Offer," "Granny's Comforts," and "A Reverie," J. E. Austin being awarded a bronze medal for "Entangled," "Left by the Tide," and "The Gentle Craft."

Class M (enlargements). A. R. Dresser wins the silver medal for "Cooling Waters," and J. W. Evans the bronze medal for "Tettenhall Wood."

Class N (architecture). The silver medal is awarded to E. Court Cole for three excellent prints by Blanchard's platinum process, Dr. T. H. Morton securing the bronze medal with views of Lincoln and Durham Cathedral.

Class O (instantaneous, animals, AMATEUR PHOTOGRAPHER medals). Silver, Carl Greger, very good photographs, on Ober-netter paper; bronze, J. Catto, for three clever studies of dogs, taken in Victoria, Australia.

Class P (ladies' work). The first prize, a water-colour drawing, was awarded to Mrs. S. Frances Clarke for "Queen of Hearts," and the second prize; a bronze medal, to Miss Ada Scott for nine landscape photographs, which show considerable promise; another bronze medal was given to Miss S. Ballard for her exhibits, "Contemplation" and "The Milkmaid."

Class Q (prizes were offered for work done by *bona fide* residents in the Isle of Wight). H. Everitt took both prizes, the first a camera and kit, given by Colonel Malden, and the second, an oil painting, by Mrs. Cole Norman.

Class R (series of views of the island). Miss Ada Scott took the first prize, and W. D. Groundsell the second.

We are not intending to find fault, but the Committee have been very lavish in their prizes. We have no doubt that those who have secured prizes will be delighted with the verdict of the judges, and those who are left out in the cold must hope for better things. In all photographic exhibitions there are far too many classes. Thirty-six prizes were offered, 33 awarded, and there were in all 64 exhibitors.

We are sure that the exhibition will be appreciated at Ventnor. The Committee have been unremitting in their zeal to make the exhibition a success, the bulk of the work falling to the lot of Col. Malden and the Hon. Secretary, Mr. W. Hoskin.

On the evening of Monday, the 19th, the first day of the Exhibition, Mr. Charles W. Hastings exhibited the AMATEUR PHOTOGRAPHER 1890 Prize Slides to a large and appreciative audience. The lantern was in charge of Mr. Nicholson. During the exhibition of the slides, Mr. Hastings gave a running comment upon them, and made many references to recent advances in photography.

On Wednesday evening Mr. T. M. Brownrigg showed a very interesting collection of slides made by himself from his own negatives; and to-night Mr. J. Dore, of Sandown, is to show a selection of his slides, entitled "British Subjects;" these will, we are sure, be much appreciated. The Exhibition closes on Saturday.

## Societies' Meetings.

**Birkenhead.**—The Association opened their year on the 15th inst. with a soirée and reception by the President (Mr. G. E. Thompson) and Miss E. Thompson, in the rooms of the Y.M.C.A., Grange Road. This was the first presidential reception the Association has enjoyed, and it was very successful, being largely attended, about 250 members and friends being present. On arrival at the Y.M.C.A., the whole of which building was thrown open, the guests were met and welcomed in the library by the President and Miss Thompson. The proceedings then opened with a select concert in the small lecture room, which was rather crowded. In the library an assortment of transparencies, taken by members of the Association, were exhibited. At the close of the first part of the musical programme the guests adjourned to the reading-room, where a supply of eatables were partaken of with tea or coffee. Limelight demonstrations were given concurrently, on account of the large number of guests, in the upper and lower room, and presided over respectively by Mr. G. A. Carruthers and Mr. A. F. Stanistreet.

**Bradford.**—The first monthly meeting for the new year was held on the 15th inst., when Mr. Walter Leach, F.C.S., a member, gave a paper on "The Diazotype Printing Process."

**Brechin.**—The usual monthly meeting was held in the Association Rooms on Tuesday, 13th inst., Mr. George Mackie, Vice-President, in the chair. The Secretary intimated that the Committee had arranged that assistance should be given to beginners on Tuesday evenings—Mr. Mackie, developing plates; Mr. Ross, lantern slides by contact; and Mr. Stewart, slides by reduction. Mr. Stewart then read a paper, "Through the Highlands with a Camera."

**Bury.**—The members of this newly-formed society met at the Temperance Hotel on the 6th inst., under the chairmanship of their President (Mr. J. R. Thompson), when Mr. J. T. Pentney read a highly interesting and instructive paper, entitled "A Glimpse at Photography."

**Cambridge.**—On the 7th inst. the first annual exhibition of photographic work in connection with the Club was opened in the rooms of the Cambridge University Photographic Society, No. 2, St. Mary's Passage. Two prizes were offered by Mr. C. S. Roe, and for these competition was fairly keen. The first prize, a silver cup, was awarded to Mr. F. H. Sanderson, for a matt-surface silver print, entitled, "Gossip." The picture is the result of a happy inspiration which seized the artist while in Northampton Street, Cambridge. An old gentleman, well-known to Cantabs, is seated outside the door of his house, talking to an old lady, who is dressed in very quaint style. The effect is wonderfully good. Mr. W. H. Hayles secured the second prize, a silver-mounted horn, with a bromide print on Eastman paper. The picture is a landscape, taken at Gomshall, Surrey. There was no third prize awarded, but Mr. S. H. Pryor was placed third in order of merit, with a village street scene at Stapleford, Cambs, which depicts a water-cart and figures. The exhibition was also open on the 8th inst., when there was a lantern demonstration.

**Cardiff.**—On the 9th inst. a numerous set of capital slides, depicting the city of Boston (U.S.) and its environs was put through the lantern. Most of the views were appreciated, not only by reason of their "sharpness" and general excellence, but because of the historical incidents and events narrated in the descriptive lecture read by Mr. Bedford. A good audience assembled at head-quarters on the 16th inst., to witness a lantern display by Messrs. Tom Evens and T. E. Heath. About 180 slides were passed through the lantern, depicting some of the choicest scenery in the neighbourhood of the Gower Coast, St. David's, Clovelly, Vale of Neath, etc.

**Chemical Industry.**—The ordinary monthly meeting of the Liverpool section of this society was held on the 14th inst., Mr. A. Norman Tate in the chair. The proceedings opened with a discussion on two papers read before the last meeting of the section by Captain Abney and Messrs. Hurter and Driffield on "The Sector and Grease Spot Photometers and their Results." Dr. Hurter then read a paper by himself and Mr. V. C. Driffield on "The Relation between Photographic Negatives and Positives," a continuation of their photochemical investigations, the first portion of which has been published in the journal of the society. A paper by Mr. J. T. Redwood on the "Conversion of the Nitrogen contained in Acid Sludge into Ammonia" was read by Dr. C. A. Kohn, in the absence of the author.

**Croydon.**—Between thirty and forty members assembled on the 19th inst., the President, Mr. H. Maclean, being in the chair, to hear an address by Mr. A. R. Dresser on "Hand Camera Work." The lecturer's remarks, which were by turns humorous and instructive, were attentively followed by an appreciative audience, who seemed greatly to relish the opportunity of listening to so characteristic an exponent of matters photographic.

**Croydon Microscopical.**—The 16th inst. was a lantern night, when a good selection of over 200 slides by members were passed through the lantern during the evening. The next ordinary meeting will take place on February 6th, and a lantern night on the 20th February.

**Ealing.**—The members of this society met on the 15th inst., when the chair was taken by the President (Mr. H. W. Peal). Two new members were elected. The set of slides, "In and Around Columbus," were passed through the optical lantern and much appreciated. Views by members were also shown.

**Formby.**—The Hon. Secretary writes as follows:—"In the death of their President, the Formby Camera Club loses its most active member. The gentleman in question (Mr. R. E. Maclean) was appointed President on the formation of the club two and a half years ago, and had been three times re-elected. He was an enthusiastic amateur photographer, and turned out some very creditable work at the local exhibitions. His interest in photography dated back to the old wet-plate days, since which time he kept himself well abreast of all latest advances and improvements, and the club benefited by his devotion to the black art. His familiar figure at the ordinary meetings, and his genial manner and his readiness to assist in all matters photographic, endeared him to all the members. His death took place at his residence 'Kingsleigh,' Freshfield, on December 27th, after only a week's illness.



Owing to the above sad event, the club did not meet on the 12th inst. The fixture for the meeting was a demonstration on bromide enlargements by the late President. The next meeting will be held on the 26th inst."

**Glasgow.**—The usual monthly meeting was held on the 15th inst., Mr. Wm. Lang, jun., F.C.S., President, in the chair. The following gentlemen were unanimously elected members:—Professor J. G. McKendrick, M.D., F.R.S., Mr. Arthur Robinson, Mr. David Johnson, Mr. Matthew Edwards. A resolution expressing regret at the death of Mr. A. Schulze, F.R.M.S., and the loss the society had sustained, was unanimously agreed to. Mr. J. Adamson, jun., Rothesay, gave a practical demonstration of a method for taking instantaneous pictures indoors by means of Slingsby's magnesium flash lamp. Two plates were successfully exposed and developed during the meeting.

**Graphic (Plymouth)**—The 7th annual meeting was held on the 12th inst.; Mr. R. Murray in the chair. The Secretary's report having been read, the Treasurer made his statement of the finances, which showed a balance in hand. The retiring officers, Mr. Murray (Chairman), Mr. Watson (Treasurer), and Mr. Hawker, were unanimously re-elected and heartily thanked for their past services. Miss Gidley, Mr. H. R. Babb, Miss Stoye, and Mr. J. B. Foster were chosen as members of the Council. On January 26th Mr. Babb will give a lecture on "How Artistic Sight Differs from Ordinary Sight."

**Greenock.**—The second annual exhibition of members' work was opened in the Watt Museum Hall on the 9th inst., and on the 10th a lantern exhibition was given in the same place for the benefit of the Greenock Infirmary. Both exhibitions were a great success.

**Holborn.**—The usual weekly meeting was held on the 16th inst., Mr. Golding in the chair. The Secretary read a paper by Mr. E. J. Wall (who was unable to attend personally), on "Notes on the Early History of Photography prior to 1800," which was pregnant with a great deal of useful information.

**Huddersfield.**—The monthly meeting, held on the 13th inst.—the President, Surgeon-Major Foster, in the chair—was a lantern evening.

**Keighley**—The annual conversazione and competition was held on the 5th inst. In the competition, in addition to certificates, a silver and a bronze medal were offered for the best collection of photographs exhibited in three classes. The silver medal, however, has been withheld, but the judges placed on record that, had Mr. S. Bairstow complied with the conditions, he having restricted himself to landscape, his excellent work would have entitled him to the medal. The bronze medal goes to Mr. James Waters. The Judges were Mr. T. C. Butterfield, art master, and Mr. Clement Williams, F.R.I.B.A., Halifax. The latter decided questions in reference to technique. The following are the awards:—Seniors.—Landscape or seascape: first prize certificate, S. Bairstow; 2, James Waters. Genre pictures: prize withheld. Architectural subjects: first certificate, withheld; 2, James Waters. Enlargements: Walter Mitchell; 2, John Gill. Portraiture: first, withheld; 2, T. Heaps. Transparencies: J. W. Laycock; 2, T. Heaps. Architectural subjects within the borough: first, withheld; 2, Ellis Myers. Mechanical subjects: prizes withheld. Juniors.—Frank Gill; 2, W. H. Hainsworth.

**Kendal.**—The usual monthly meeting was held on the 14th inst., Mr. F. Wilson, J.P., in the chair. Two new members, Messrs. J. R. Bridson, Brarwood, Sawrey, and D. Rose, Staveley, were elected. Mr. C. W. Hastings' report on the prints competition was read, and the prints exhibited. The business of the evening was a paper on "Some Practical Hints in Photography," by Mr. John Armistead (Dalton), who gave many valuable hints and suggestions.

**Lantern.**—At the meeting of the 12th inst., Mr. E. M. Nelson, F.R.S., read a paper on "The Lantern in its Relation to Photography and the Microscope."

**Leicester.**—A regular meeting of the Society was held on the 15th inst., Mr. S. S. Partridge (President) in the chair. The election of officers for the ensuing year was then proceeded with—Mr. J. T. Cook, V.P., President; Mr. F. G. Pierpoint, Vice-President; Committee: Messrs. Porritt, Joliffe, Bankart, Partridge, and Weatherhead; Mr. Wilson, Treasurer; and Mr. H. Pickering, Secretary.—An interesting and instructive evening was passed on the 16th inst., when Mr. E. Howard Jaques, of Birmingham Photographic Society, came to lecture before the Society on "A Trip Through Western Norway."

**Louth and District.**—The monthly meeting of this Society on the 14th inst. was made the occasion of a semi-public exhibition of lantern slides. The meeting was held in the Council Chamber of the Town Hall and was fully attended, admission being by complimentary tickets only, each member having six at disposal. The number of slides exhibited was 174, being sixteen sets of ten slides each, and portraits of some of the artists. To each set had been awarded a prize in the 1890 annual competition for this class of work held by the proprietors of the AMATEUR PHOTOGRAPHER. Four classes of subjects were included in the competition: (1) landscape, etc.; (2) figure studies and genre; (3) animals and instantaneous; (4) architecture.

**Madras.**—The fifth half-yearly competition took place on the 3rd December, at the Masonic Hall, Mount Road. The subject for competition was a "A Study of Architecture," and twenty large and twenty-five small pictures were submitted to the judges, whose awards were as follows:—Large views—silver medal, Mr. F. Dunsterville; bronze medal, Mr. F. Dunsterville; certificate of merit, Mr. J. C. Hannington. Small views—silver medal, Mr. F. Dunsterville; bronze medal, Mr. F. Dunsterville; bronze medal, Mr. E. W. Stoney; certificate of merit, Mr. E. W. Stoney; certificate of merit, Mr. O. Michie-Smith. Lantern slides—silver medal, Mr. E. W. Stoney; bronze medal, Mr. F. Dunsterville. A special prize for the best landscape was competed for by eighteen views, and the prize (a set of photographic apparatus presented by Messrs. W. E. Smith and Co.) was awarded to Dr. A. G. E. Newland.

**Newcastle-on-Tyne and Northern Counties.**—The annual meeting was held on the 13th inst., Mr. J. P. Gibson in the chair. The officers elected for the current year are as follows:—President, Mr. A. S. Steavenson, J.P.; Vice-Presidents, Mr. J. P. Gibson, Mr. H. R. Procter; Treasurer, Mr. John W. Robson; Secretary, Mr. Edgar G. Lee; Council, Messrs. M. Auty, J. Brown, J. E. Gould, T. O. Mawson, F. Park, W. Parry, H. G. Ridgway, J. H. Robinson, H. Shand, L. Williamson. Mr. Edgar G. Lee read a paper on "Lantern Slide Making," and Messrs. Lee and Brown demonstrated the development of lantern plates, the former using Thomas's hydroquinone formula, and the latter Warnerke's eikonogen formula, diluted, and restrained with brom. pot., 2 grains to the ounce. Successful slides resulted. The lantern was afterwards brought into requisition, and about 150 slides put through.

**Peterboro.**—The monthly meeting of the Society was held on the 15th inst., to have the 1890 prize slides, kindly lent by the Editor of the AMATEUR PHOTOGRAPHER, exhibited on the screen.

**Putney.**—At the meeting on the 10th inst. the following gentlemen were elected upon the Council for 1891:—President, the Hon. Baron Pollock; Vice-Presidents, Mr. T. Gilbert, Rev. L. Macdonald; Council, Mr. Chas. Ballard (Hon. Sec.), Mr. E. V. Barrett, Mr. W. H. Congreve, Dr. J. F. Farrar, Mr. W. F. Gorin, Mr. J. C. Leman, and Mr. M. S. E. Manifold. The meetings of this Society are held fortnightly, on the second Wednesday and last Saturday in each month. Ladies and gentlemen desirous of joining are invited to communicate with the Hon. Sec., 46, Erpingham Road, Putney. January 31st, Ilford special lantern plate demonstration.

**South London.**—An ordinary meeting was held on the 16th inst., Mr. F. W. Edwards in the chair. Mr. Leon Warnerke gave a demonstration of "Photo-Mechanical Printing Processes," consisting of a lucid description and practically working the collotype process before the members.

**Staff. Potteries.**—At the monthly meeting on the 13th inst., one new member was elected. The evening was given up to lantern work; new slides made by members were passed through and criticised, and Mr. E. B. Wain gave a short paper on "A Week's Holiday in the Isle of Man."

**Stockton.**—The annual meeting was held on the 14th inst.; Dr. Stainthorpe (President) in the chair. The Treasurer read his annual report, which showed a balance in hand of nearly £3. Dr. Stainthorpe was re-elected President; Mr. Rhodes, Treasurer. The following gentlemen were elected members of the Council:—Messrs. Jackson, Appleby, Graham, Moul, Draper, and Bradley, Mr. Ellan agreeing to undertake the duties of Secretary.

**The Photographic Society.**—At the ordinary meeting held on the 13th inst., Capt. W. de W. Abney in the chair, nine new members were elected; auditors and scrutineers were appointed; gifts from P. H. Emerson, Esq., "Life on a Tidal Water," and E. Cocking, Esq., a collection of year-books of the *British Journal of Photography* and *Photographic News*, to the library, were shown, and votes of thanks were passed to the donors. It was announced that the progress medal had been awarded to Colonel J. Waterhouse, B.Sc., and that an exhibition of photographs and apparatus would be opened at St. Petersburg on March 29th. Mr. E. W. Maunder, F.R.A.S., then read a paper, illustrated by a large number of lantern slides, on "Photography as Applied to Astronomy." It was announced that the anniversary meeting would take place on February 10th, and the annual dinner would take place at the Café Royal on the 9th.

**Torquay.**—The monthly meeting was held on the 13th inst., when a very interesting paper on "Platinotype" was read by Mr. George Edwards. Afterwards several very successful experiments in development were made.

**Toynbee.**—The 15th inst. was a lantern evening. The club was indebted to the Boston Camera Club for the loan of their excellent set of slides, "The White Mountains of New Hampshire," the beauty of which was much admired by an appreciative audience. A few slides illustrative of life in East London were also passed through the lantern.

**Tunbridge Wells.**—The fourth annual meeting was held on the



7th inst., the President, Mr. F. G. Smart, in the chair. Messrs. Lauder, Wilson, and Penn were duly elected members. The following officers were re-elected: President, Mr. F. G. Smart; Vice-Presidents, Mr. J. G. Calway, Rev. A. T. Scott, Rev. J. E. Rogers, Mr. G. Percival Smith; Hon. Treasurer, Mr. B. Whitrow; Hon. Secretary, Mr. Joseph Chamberlain; Hon. Auditor, Mr. W. E. Bramp'ou; Committee, Messrs. J. W. Morgan, A. W. Pierson, G. W. Howard.

**Ulster.**—The fifth annual meeting was held on the 12th inst. Mr. William Swanton, F.G.S., Vice-President, in the chair. The following were elected office-bearers of the Society for the year 1891:—President, Mr. Alexander Tate, C.E.; Vice-Presidents, Mr. William Swanton, F.G.S., Mr. John Brown; Committee, Messrs. J. J. Andrew, E. Braddell, S. B. Coates, M.D., W. H. Drennan, R. J. Evans, W. Gray, M.R.I.A., J. Stelfox, J. Wilson, M.E.; Honorary Treasurer, Mr. S. D. Neill (12, Donegall Place); Honorary Secretary, Dr. Cecil Shaw (14, College Square East).

**Wallasey.**—The monthly meeting was held on the 7th inst., the Vice-President, Mr. C. B. Reader, in the chair. The meeting took the form of a lantern entertainment. About 200 slides were exhibited. Mr. Donald Kendall was adjudged the winner in the lantern-slide competition, showing some very fine views in North Wales, and Mr. H. Wilkinson was awarded the silver medal in the print competition. Mr. Wilkinson has also carried off this season first prizes at the Liverpool and Birkenhead societies' competitions.

**Wimbledon.**—The members of the recently formed amateur photographic society of Wimbledon spent a pleasant evening on the 9th inst., when there was a goodly muster for the first lantern evening. Excellent slides were exhibited by Messrs. Oliver, Mitchell, Whitfield, Edsall, and Rev. H. Allfree, and sufficient evidence was given of the mutual advantage and pleasure afforded by a combination of disciples of this delightful art.

**Woolwich and District.**—An exhibition of the American lantern slides took place on the 15th inst. The slides were very much appreciated, and a very pleasant evening was spent.

## Quarterly Examinations in Photography.

**Question 1.**—Give the salient points to be observed when choosing a camera and tripod?

**ANSWER.**—*The camera.* The salient points of a camera, for the general use of an amateur, are as follows:—

- (1) The framework must consist of well-seasoned wood (mahogany), dovetailed and screwed together.
- (2) The bellows should be of leather, which is more lasting than cloth, and of the conical pattern, which allows of the wood front being much smaller and lighter, and also allows of the camera being compactly closed up.
- (3) The focussing arrangement should be effected on the "rack-work" principle, and the construction of camera should allow of "double extension" focussing.
- (4) The front should be provided with cross movements, so that the lens might be moved either vertically or horizontally from the centre as circumstances should determine.
- (5) The camera back should be constructed on the "reversing" principle, which readily allows of change from the horizontal to the vertical position. It should also be provided with mechanical con-

trivances, so as to allow of its swinging in both a vertical and horizontal direction.

(6) The focussing screen should be secured by hinges, so as to fold over the camera top, on the insertion of dark-slide.

(7) The dark-slides should be double and of the book pattern. These should especially be of good materials and workmanship, as any warping or shrinking would admit light and render the slide useless.

**The Tripod.**—The tripod consists of two parts, viz., (1) head and (2) legs. The head should be of sufficient size as to reach quite, or very close, to the edges of camera base-board. (2) The legs should be made on the two-fold principle, but, instead of the lower half folding between the two struts of the upper part, it should slide up between them. This method allows of moving the camera up or down without moving the points of support. The connection between legs and the head should be secured by screws, or, better, by springs, as in the Ashford stand, so as to ensure perfect rigidity.—LINDUM.

**Question 2.**—How would you choose a lens?

**ANSWER.**—The choice of a lens depends on the work it will have to do. For landscape work a single lens is by far the best, and is certainly the best all-round lens for small-sized plates. Long-focussed lenses for large plates are always slower than those of short focus, and the single lens becomes too slow for general work. For quick work the lens should be a Rapid Symmetrical or Euryscope. For architecture in large sizes a symmetrical lens is a necessity, but up to whole-plate the distortion of a single lens is not noticeable, and the resulting picture has greater brilliancy than when taken with a doublet.

The working apparatus and uses of most modern lenses of moderate size are as follow:—Single meniscus or plano-convex,  $f/10$ , views and general work; rapid symmetrical,  $f/8$ , architecture, portraits, general; euryscope,  $f/6$ , hand-cameras, instantaneous work, portraits; portrait lenses,  $f/4$  to  $f/2$ , portraits and large heads.

The lens should cover the plate to the edges with a sensibly uniform illumination. It should focus sharply with the largest stop. Flare-spot and ghost should be absent; inside of mount should be dead-black. Lenses should be removable for cleaning, and should be accurately centred. The visual and actinic foci should coincide.

For all purposes I use a cheap quarter-plate meniscus, working at  $f/10$ . With it I have taken a train at full speed and an interior of a church, half-plate, with no perceptible distortion.—C.

**Question 3.**—What is the best form of instantaneous shutter, and why?

**ANSWER.**—(1) One that reduces vibration to the minimum, *because* in a rapid exposure any small vibration blurs the picture.

(2) One that will fit several sizes of lenses, *because* it saves expense.

(3) One that has few parts in it, *because* there is less to get out of order.

(4) One that will allow of regulation in length of exposure, *because* in different lights and on different subjects this is a necessity.

(5) One that allows of exposing one side of the plate longer than the other, *because* in certain cases—e.g., street scenes—one side may be in shadow and the other in sunlight.

(6) A pneumatic discharge ball and tube is useful, *because* it lessens the liability to shake the camera as in a hand discharge, and also because (vanity of vanities!) the operator can take his own portrait!

(7) One that is solid in make, yet light and small, *because* "many a mickle makes a muckle."—BIARRITZ.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign

all Queries and Answers with name or *nom de plume*.

4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance, the *number and full title of the query* referred to.

## QUERIES.

4460. **Speed of Shutter.**—Could any reader inform me how to measure the speed of a drop shutter?—O. APPLETON.

4461. **Roll-Holder.**—Will someone who has had real experience in Eastman's films give me his opinion as to the advisability of getting a roll-holder instead of using glass negatives? Are they much trouble to manipulate? Any hints as to development, exposure, etc., being acceptable.—QUANDARY.

4462. **Shutter.**—Could anyone tell me of a good shutter that will work up to about  $\frac{1}{1000}$ th of a second, price to be from 12s. to 15s?—W. F. S.

4463. **Photo-Mechanical.**—Will someone kindly give me the name, publisher, and price of a text-book on a photo-mechanical printing process, and which is the best for an amateur to go in for?—BENES.

4464. **Lacquering.**—Will some reader kindly instruct me on the making of brass lacquer, and applying same to camera fittings?—NIKLE.

4465. **Camera Bellows.**—Can anyone tell me the best material in cloth to use in making a bellows for camera?—NIKLE.

4466. **Loss of Tone, Matt Surface Prints.**—Using Scholzig's matt-surface paper to obtain a beautiful purple, when in toning bath (tungstate, advised by Scholzig), but by time prints are fixed and washed, this beautiful tone gives place to a brown colour. Observe their instructions to the letter; soak in one water before toning, for two minutes only, use toning bath tepid, fix in 3 oz. hypo to 20 of water; but tone disappears, even if I tone them to a cold blue. Would anyone kindly tell me how I can obtain the purple tone? I print deep, fix 15 minutes.—COLONIST.



## ANSWERS.

4446. **Matt-Surface Paper.**—In using this paper you must print deeper than ordinary albumenised paper. Any toning bath is suitable, but the amount of gold should be less for this paper than silver. I have, however, often toned prints on albumenised paper and matt-surface paper together, and obtained very pleasing results. —HAMISH.

4448. **Toning Obernetter Paper.**—Do you replenish your bath sufficiently with gold? If not, then this is the most likely reason why it will not act. —HAMISH.

4450. **Developing Bromide Prints** depends on what developer you use. Hydroquinone can be used over and over again until it fails to render the details of the picture satisfactorily. Pyro can only be used once. —O. APPLETON.

4450. **Developing Bromide Prints.**—In my opinion, the best results are obtained by using the developer over and over again, and adding a little fresh solution now and then. —HAMISH.

4452. **Bromide Paper.**—The papers manufactured by the firms mentioned are all very good, and, in the hands of an experienced manipulator, very beautiful results can be obtained. For myself, I prefer the paper made by Messrs. Morgan and Kidd. —HAMISH.

4454. **Exposure.**—According to meter (Watkins), your exposure ought to be about 178 sec. —ELGIN.

4454. **Exposure.**—Actinometer 60, plate 11, subject 1 (or 100),  $f/32$ , gives 100 secs. exposure. It is difficult to guess cause of error; but, presuming you are using Thomas's slow landscape, I have lately found 8 or 8 the best number to use with them, in order to avoid under-exposure. All slow plates are liable to have even less sensitiveness to feeble rays of light than the actinometer shows, and some rapid or isochromatic plates slightly greater sensitiveness. If it is a matter of considerable under-exposure, please write me direct. Perhaps you are using the earliest issue of sensitive paper. The present issue is a great improvement. The instrument you have is one of the early issues. —ALFRED WATKINS.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING's post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret. —ED: AM: PHOT:

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

S. W. P. COWAN.—Baedeker's is the best; there is no photographic guide. It is advisable to apply to the police. The exposure would be slightly less—about one-sixth less.

CLIFFORD D. FOTHERGILL (Blarritz).—(1) Nadar, 53, Rue des Mathurins, Paris, is the chief agent; J. Robaud, 7, Rue Massina, Nice; Brearley and Bascoul, 77, Rue d'Antibes, Cannes; Collier, 17, Avenue Victor Emmanuel, Mentone. (2) Yes, though probably it would not be fully exposed. (3) Try Nadar. (4) Quite as good.

MUWA.—(1) Add No. 2, or try an old developer. (2) Old developer first, then fresh. (3) Fresh developer, excess of No. 2. (4) Reduce No. 2, increase No. 1. (5) Add bromide.

GIAOUR.—(1) The angle included is precisely the same, and, therefore, the images will be identical. (2) We prefer the colour-sensitive. (3) Much better. (4) No. 2 decidedly. (5) We have had excellent results on them.

C. E. F.—The commercial is quite pure enough. E. WINN.—The bath is a great deal too strong; make it up to about double the quantity, make the bath up to 12 oz.

J. K. G.—Bromide paper for development, a gelatino-chloride paper for printing out. (1) Very good, but spoilt entirely by the incongruous figure. (2) Slightly too thin. (3) Good.

J. W. LAYCOCK.—The best plan would be to study the Exchange column, or we would do it for you if you would let us know.

H. G.—We should place them in the following order—3, 4, 2, 5, 1.

E. BUCK.—A part consists of any quantity, i.e., one ounce may be the one part, then a half part would be half an ounce; equal parts would then be one ounce of each. Two parts of water under the same conditions would be two ounces.

E. J. P.—Any of them are good, but we like No. 3. The same description applies to the second question; the order would be, probably, B, D, C, A.

W. P.—Both are over-exposed. You might try intensifying the negatives. The tree in the foreground of No. 1 is out of focus. Over-exposure is probably the cause of the latter defect.

X. X.—You might select any one, as they are all good instruments. We should place them—3, 4, 5, 7, 1, 2, 6. Surely you could have focussed better

with the lens you mention. Did you use a stop or the full aperture?

E. S. ROBERTS.—(1) You should have used a smaller stop in the case of No. 1; the edges are quite out of focus. No. 2 is better, but still not sharply focussed. (2) Either paper is good, and will give equal results if properly worked. (3) Yes. Send us some more specimens after a month's practice.

BOLTON.—The photographs are fairly good, No. 1 being the better of the two. You are doing very well. The lenses you mention will clearly do good work. We cannot answer your last question, as everything depends on the work of the other competitors.

A. WIGGINTON.—(1) We believe so. (2) We do not know that they are preferable, but they are certainly as good. (3) We should think they could.

STEPHEN D. HAYWORTH.—If we have any preference, it is for C. D. as perhaps more compact than the others and less liable to warp or stick.

SALTED PAPER.—180 grs.; see Clark's "Platinum Toning," to be got from our publishers. We should prefer ammonio-nitrate.

H. C. HALL.—No. 1 is a good print, but the negative is capable of better results. (2) Over-exposed; the standing figure spoils the grouping. (3) Is very bad both as regards focus and printing. (4) Is really a little picture, well printed. (5) Good. (6) Under-exposed. (7) Badly focussed. (8) Very good. (9) Very good.

JOSEPH CHAMBERLAIN.—The chest and photograph reached us safely, for which please accept best thanks.

HUGH L. BRIDGER.—When the slides come back, will revise the titles. Very glad your friends were so well pleased.

F. B. BROWN.—Shall have pleasure in lending you slides at any time.

J. W. HORTON.—We have duly received your letter with *nom de plume*. Certainly.

H. A. HALLIWELL.—We note contents of your letter. Your suggestion is under consideration.

W. SMEDLEY.—There will be no objection, we think, to your exhibiting the print in the portrait class at Liverpool. Write Mr. Mayne about it.

C. W. TOWNSEND.—Next Monday, at 5 p.m., admitted upon presentation of your visiting card. No advantage would be gained.

A. W. BULLEN AND J. H. NUNN.—Thank you for the information.

JOHN H. MONTAGUE.—Write to Mr. Bynoe, Photographic Dealers and Manufacturers' Association, Southampton Row, W.C. They will probably investigate the matter. We cannot spare the space. We think that the matter speaks for itself, and are surprised that people should be so gullible. Many thanks for good wishes, which we reciprocate.

J. ANDREWS.—Your letter to hand on return to town. The publishers will send copy of *Quarterly* as requested.

M. DE DECHY.—Kindly send us on negatives that you may select as soon as possible.

H. HOLT.—Will look up the MS. Any of the printing papers you name are of first quality.

S. FRANCIS CLARKE.—Thanks for your letters. The slides reached us safely at Ventnor. We will have the slides replaced.

W. H. SHIRLEY.—Glad to have your kind message.

H. MACLEAN.—Will write you later on.

F. A. WALLER.—The publisher has written to you.

MARTIN J. HARDING.—Let the photographs come to us in the middle of each month at latest for criticism in *Reporter*. We should like to have them in our possession at least a fortnight.

A. W. GOTTLIEB.—You do not quote the paper, and some very odd statements are made in daily papers.

J. R. ELAM.—Your application shall have attention and we will write you in a few days.

G. B. BETHEMANN.—The portrait of Herr Schloesser will be reproduced in the *Reporter*. Thanks for the notes.

A. D. GUTHRIE.—Will send on certificate in a few days.

A. W. NICHOLLS.—Very glad to know that the 1890 prize slides gave such satisfaction.

CAPT. DE CERSIGNY.—The medal is in hand, and may be expected in a week or so.

W. GEO. HALL.—Shall be pleased to see your work. Why not have down a set of our "Monthly Competition" prints (packing fee, one shilling)? You would get many wrinkles from them. Very glad you find the AM: PHOT: so useful.

HENRY KILBURN.—Sorry to have been so discourteous. Have written you this week.

W. T. BARTON.—Send in again, and we will try and give a little more attention to your contribution. Also, in order that mistakes should not be made, write legibly.

G. E. MALLEHAM.—*Photography* advertised some "American slides," but we know nothing about the loaning of them.

G. FAIDA (Venezia).—The prints sent certainly show what can be done; but still we think that a good deal of the fog is due to the process which the plates have to undergo. In the December *Heft*.

*Photographische Rundschau* a similar instance occurs; it was probably just one box defective.

PLATO.—We should purchase as follows:—No. 3, of  $8\frac{1}{2}$  in. focus, and No. 7, of  $6\frac{1}{2}$  in. focus, or, instead of the latter, a  $6\frac{1}{2}$  in. and 15 in. focus landscape lenses. The Iris are more convenient. We will consider your suggestions.

F. POWELL.—We will write you privately.

FRANKY.—You give us no idea of what the object is again: the white background, whether copying or portraiture. Let us know this, then we can help you. For bromide paper use Eikonogen developer. It certainly gives good results, with less trouble than ferrous oxalate. Ten grains of magnesium will give a good flash. Use extra-rapid plates, with ribbon and red-color; the lighting is more under control, of course. You would find your present lens (if too long a focus for detective work. The meter you use is a good instrument.

F. PARTIDGE.—It is almost a matter of indifference. The weaker the bath the slower the toning, and, consequently, a greater tendency to brownish tones. If the water is used at about 80 degs. Fahr., 1 gr. to 10 oz. is a good strength. If cold water is used, the bath must be stronger.

E. S. R.—It is a pity the negative is not evenly stained. We should be inclined to try and make a transparency from the negative, and then soak the negative in weak ammonia water, wash, and then soak in weak hydrochloric acid. If you like to send the negative to us we will try and help you.

JOHN A. WALTON.—(1) We should prefer  $6\frac{1}{2}$  by  $4\frac{1}{2}$ , and use a half-plate long-focus square belows camera, such as B, and use carriers, so that you could use the camera with the ordinary half-plate if desired.

H. TONKIN.—In the number for February, 1889. See also Stingsby's book on the subject, published by Marion and Co.

ANDREW MCKINDLAY.—Many thanks. We will advise "Memnon."

R. DILLON.—Will reply next week.

MRS. BEXYON.—Will write to you.

NIECK.—They can be thoroughly relied upon.

Will reply fully to your letter by post.

T. KIDD (Spain).—The form shall be sent you, and at the same time we will reply to your questions.

GEO. PHILIPS.—At the time of writing cannot help you. Should we be able to answer your question, will write you.

J. HARRISON.—Thanks for your letter. There can be no reason why you should not advertise.

## Quarterly Examinations in Photography.

## QUESTIONS.

- Describe the methods for testing a lens for chromatic and spherical aberration, the aberration of form, the aberration of thickness, and the aberration of position of lenses.
- What is the meaning of the terms chemical and visual foci? Explain the principle of constructing an achromatic doublet from two uncorrected lenses, if this can be done?
- What is a "flare" and a ghost, and how are they caused?

(Latest Day for Answers—January 26th.)

## RULES.

- Answers must be received on the morning of the Monday week following the publication of the question.
- All answers must be preceded by the question and should be written on one side of the paper only.
- A *nom de plume* may be used, but in every case the full name and address must also be given.
- Answers must not exceed 250 words, unless otherwise stated by the examiners.
- Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.



## Lantern Slide Exchange.

**NOTE.**—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

H. K. Bridger, Japonica Cottage, Stanley Road, Twickenham, wishes to exchange slides of Thames, Wye, Glamorganshire, London, etc., for slides, unmounted, on approval.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent., the minimum being one shilling, upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 6d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," Nos. 182 to 273 (one missing); offer wanted.—Benson, Havelock Terrace, Worthington.

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, vols. ii. to viii., variously bound (vols. iv. and v. incomplete), vols. ix., x., xi. in reading cases, vol. xii. in parts, 5s. the lot; "Photographic Reporter," vols. i. and ii. in parts, complete, with loose plates, 5s.; purchaser pays carriage. — W. A., 48, Warwick Gardens, London, W.

**Cameras, etc.**—Lancaster's Watch camera, with three dark-slides, cost 31s. 6d. a week back, also three extra slides and three dozen plates; what offers? or would exchange for Stirn's Waistcoat camera or other hand-camera. Reason for selling, have bought larger camera.—Apply, C. Hudson, 4, Esk Villas, Joscelyn Road, Richmond, Surrey.

Whole-plate camera, 1 rather bellows, all movements, three double slides, in first-class condition, a bargain; £4 10s.—J. Smith, 176, Birchanger Road, Norwood Junction.

Half-plate Instantograph, stand, changing bag, waterproof case, Watkins' meter, Rubralux lamp, dishes, frames, etc., good condition; 95s.; or offer.—Wardale, Market Place, Newark.

**Cameras, Lenses, etc.**—Condenser, 10 in., two ledes, mounted on mahogany base and iron standards, also enlarging camera, 12 by 15, with carriers to quarter plate; £7 7s.; or sell separately. — W. Wells, 14, Girdler's Road, West Kensington.

Camera, Lancaster's Instantograph half-plate, all latest movements and improvements, reversing back, leather bellows, etc., Instantograph lens, Iris stops, and instantaneous shutter, double dark-slide, carrier, and folding mahogany stand; 75s.; approval.—Wells, 31, Woodale Road, Walthamstow.

Want to sell the following of my photographic accumulations:—4B Dallmeyer's portrait lens, 16 in. Ross' R.R. (12 by 10), Hughes' patent enlarging apparatus, rectangular condenser, special lens, lime-light apparatus, with 12 ft. Bryn's oxygen cylinder, enlarging up to 10 by 8 negatives, cost £32; 15 by 12 Watson's long-extension Tourist camera, three double dark-slides, Beck's 24 in. R.R. and W.A. lenses, both Iris diaphragms, Kershaw double blind shutter, tripod, Key hand-camera, brass bound, six double plate-holders, and arrangement for connection to tripod, Shew's Eclipse quarter-plate hand-camera, six double backs, view-finder, and focussing screen; make offers, subject approval, Editor, AMATEUR PHOTOGRAPHER, or other personal inspection, to No. 100, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lancaster's quarter-plate Instantograph camera, lens, tripod, double back, instantaneous shutter, quite new, warranted perfect; 30s.; deposit.—No. 102, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Whole plate long-extension camera, leather bellows, dark-slide, portrait lens (cost £8), dishes, chemicals, and backgrounds, new condition, cost £20; offers.—Higginshaw, Oldham.

**Condensers, etc.**—Two condensers and front lenses for optical lantern, 25s.; whole-plate combination lens, three foot, Iris diaphragm, 40s.; Wellsbach incandescent gas burner, 10s.; view-meter, 1s. 6d.—Wills, 21, Wordsworth Street, Cardiff.

**Hand Cameras, etc.**—Griffiths' guinea detective camera, three double backs, scarcely used; 12s. 6d.—P. Forster, Elmbank, Darlington.

Detective camera, Kerr's patent (by Abraham), 12 plates, rapid rectilinear lens, adjustable instantaneous shutter, weighing, complete, 7½ lbs.; cost £7 7s.; accept £4.—E. Clark, 57, Addiscombe Road, Croydon.

**Lantern.**—Massive binomial, brass fronts, jets, dissolver, slides, new condition, cost £35; £20, offers.—Higginshaw, Oldham.

**Lantern Slides.**—Antwerp, Brussels, Waterloo; 23 lantern slides of above places, in box; price 30s.—Address, Engraver, 10, Northcote Street, Beeston Hill, Leeds.

Will exchange set of (12) "Heroes of the Victoria Cross," coloured, and 50 others, views in Wales, etc., for a three-fold whole-plate tripod; slides can be seen by appointment.—Sims, 5, Peel Grove, Bethnal Green.

**Lenses.**—Ross' half-plate rapid symmetrical lens, with diaphragms, complete; 70s.; bargain.—Barton, Morriston, Elgin.

Levi's portrait lens, 15s.; lantern objective, 10s.; Lerebours and Secretan's quarter plate portrait lens, 20s.; quarter plate portrait lens, 15s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

For sale, a 7 by 5 Optimus Ruryscope lens, quite new and guaranteed. — For price, write to Thomas Usher, Bates Cottages, Holywell via Backworth, Newcastle.

Half-plate portrait lens and quarter-plate ditto (by Burr), sell or exchange for Taylor's and Wray's 8 by 5 R.R., with Iris, and quarter-plate roll-holder, cash to value.—M. Mallett, 227, Finchley Road, N.W.

**Lenses, etc.**—Lancaster's half-plate Instantograph lens and shutter, complete, perfect; 17s. 6d.—A. H., 32, Crosby Street, Derby.

Optimus 5 by 4 R.L. lens, with Place's shutter; cost £2; price 26s.; as new.—Thornton, 15, Bromley Road, Beckenham.

**Magic Lantern, etc.**—Magic lantern, 4 in. condensers, portrait lens, three-wick lamp, and 70 slides, also 10 ft. sheet; will exchange for photographic apparatus, whole-plate preferred, or Safety bicycle.—Caesar, 24, South Western Road, Twickenham.

**Sets.**—Underwood's 1880 half-plate instant set complete, as new, bargain, 67s. 6d.—H. Rowe, Wallbridge, Stroud.

Sale or exchange, whole-plate outfit, also bur-

nisher and press.—James Ingham, New Mills, near Stockport.

**Sundries.**—Will exchange a good rifle of the French army (the Chassepot) with bayonet, or a good French horn (cor de chasse), for a good hand-camera, approval.—Bousselle, Glenleigh, near Hastings, Sussex.

Offers? 15 ft. oxygen cylinder, brass screw regulator, panoramix carrier, cost 10s. 6d., blow through jet, all perfect order together or separate.—T. Fawcett, King's Langley.

**Washers.**—Wood's washer, new, with adjustable rack, cost 17s.; exchange brown leather gun-case.—Jas. Higgin, Athenaeum, Manchester.

## WANTED.

"Amateur Photographer."—AMATEUR PHOTOGRAPHER in exchange for *British Journal* from October 31 last, and weekly.—Jas. Higgin, Athenaeum, Manchester.

**Burnisher.**—Half-plate burnisher; exchange handsome pair of opera glasses in case.—D. White, Stores, Ardington, Wantage.

**Cameras.**—Kodak No. 1, cheap, approval.—C. Willmot, 1, St. Paul's Place, Canonbury, London, N.

Whole-plate camera, long focus, reversible back, one or more double slides, cash on approval.—Roberts, 28, Harrington Road, South Norwood.

Good hand-camera, perfect condition, approval; exchange lathe, 8 feet bed, and Rogers' fret machine.—Turner, Woodville, Lytham.

Lancaster's quarter-plate Instantograph, complete, must be in perfect condition and cheap.—Thompson, care of Nokes, 18, Frenchwood Street, Preston.

Half-plate camera for cash, or exchange dissolving view outfit.—A. D. Clarke, Pailton, Rugby.

**Camera, etc.**—Quarter pocket camera and best oil lantern, 4-in. condensers; exchange Diamond camera and half-plate set.—William M'Culloch, Newtownards.

Half-plate camera, long extension, and slides, no lens nor tripod; full particulars.—Cain, 1, Wellington Street, Millom.

Half-plate modern camera, three slides; send particulars and price.—Wills, 21, Wordsworth Street, Cardiff.

**Cameras, Lenses, etc.**—12 by 10 camera, lenses, tripod; exchange 18 ct. lever, silver spoons.—1, Gurdon Place, Priory Street, Colchester.

Whole-plate camera by good maker, all movements, wide-angle lens with dishes, etc., complete; also first-rate quarter-plate camera, with three dark slides, by Watson, Beck, or other good maker, must be in first-class order. Send particulars and lowest price to—Charles Smyth, Lenagery, Co. Down.

Half-plate or larger camera, lens, dark-slides, etc., by best maker.—Spencer, Surveyor, Crawshaw-booth.

Wanted to purchase, second-hand cameras, lenses, and photographic sundries, for prompt cash. Immediate attention given to all correspondence.—Amateur Photographic Depot, 71, Oxford Street, Manchester.

**Dark Slides.**—Half-plate dark slide (wood) in exchange for No. 1 Demon and 350 stamps in album.—A. G. Mayes, 11, Comberton Terrace, Upper Clapton.

**Lantern Slides.**—To purchase second-hand lantern slides, also coloured slides of stones, etc. Good binomial and 12 by 10 R.R.—W. V. Morris, 34, Parade, Cork.

**Negatives.**—To amateur photographers. Wanted, some good negatives of views in the Isle of Man.—Address, giving particulars, No. 101, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Set.**—Camera set, Lancaster's half-plate Instantograph or hand-camera preferred; exchange only good silver watch, excellent timist, second-hand, cash value 25s., and a Quackenbush air-gun, almost new, cost 45s.—Mr. E., 344, Caledonian Road, London.

**Sundries.**—Photographic wheel box, must be in good condition.—H. Logan, 104a, Bridge Street, Burdett Road, Mile End.

**Tripod.**—Whole-plate tripod, sliding legs, Ashford or Optimus preferred, also Rubralux lamp.—E. Dringholme, Dringhouses, York.

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## NOTICES TO SUBSCRIBERS.

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## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LTD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or Apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.



# THE AMATEUR PHOTOGRAPHER

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FRIDAY, JANUARY 30, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

OUR first Monthly Lantern Slide Competition was very successful. No less than ninety-two slides entered for competition, each competitor being restricted to two slides. We were much gratified that at the exhibition of the slides at our offices on Monday evening—the first of the series—there was a very good attendance, so good, in fact, that at the next monthly show we shall arrange to give considerably more accommodation to the visitors, and hope to have a much larger attendance. The following are the awards:—

*First Prize (Silver Medal).*

EDGAR G. LEE .. .. Cullercoats,

the subjects being "Eventide" and "In the Hayfield," obtained by contact on Mawson plates, developed with pyro and ammonia. A good colour was secured by development.

*Second Prize (Bronze Medal).*

THOMAS GLAZEBROOK .. Ashton-under-Lyne.

The subjects were "The Cockle Gatherers" and "Playground of the Sea," the first by reduction and the second from a hand-camera negative, both on Fry's plates, developed with hydroquinone.

*Third Prize (Certificate).*

G. EDWARD WILSON .. .. Kidderminster.

The subjects were "The Haunt of the Kingfisher" and "In Dovedale," both by contact on Mawson plates, and developed with hydroquinone.

A full list of competitors, the titles of their slides, plate and developer used, will be found in the February number of the *Photographic Reporter*. The unsuccessful competitors' work is arranged in three classes. It should be quite understood that prize winners cannot enter again in competition for a prize of the same value as that awarded. For instance, Mr. Lee is now debarred from entering the AMATEUR PHOTOGRAPHER "Monthly Lantern Slide Competition," and Mr. Glazebrook can only compete for the Silver Medal, whilst both Silver and Bronze are open to Mr. Wilson, the winner of the Certificate. We hope that all prize winners in the "Monthly Competitions," as well as many others, will enter our 1891 Lantern Slide Competition.

WE have no intention of allowing any competitor to take more than one AMATEUR PHOTOGRAPHER Medal of the same

value, and we shall not, in future, place any of our Medals at the disposal of either photographic societies or exhibition committees. We have to complain that in several instances where Medals have been asked for and given, the Secretaries of the society or committee have not had the courtesy to send us advice as to the name and address of the prize winners. We intend to make the conditions attached to gaining the AMATEUR PHOTOGRAPHER Medals as stringent as possible, and so increase the honour attached to winning them.

We sincerely thank the readers of the AMATEUR PHOTOGRAPHER for the support they give to our competitions, and are especially pleased to find that our efforts are so highly appreciated.

The "Monthly Lantern Slide Competitions" may be had on loan. A packing fee of *one shilling* to be forwarded with each application. This fee also has to be paid for the loan of the "Monthly Competition Prints."

A CORRESPONDENT writes that Ashton-under-Lyne could well support a photographic society. We shall be glad to hear from others who are of the same opinion, although we should have thought one or other of the very excellent societies in the neighbouring towns would supply all the requirements of Ashton. The continued multiplication of photographic societies is not an unmixed blessing—better a great deal two large societies than six small ones; at least, such is our opinion.

THE Sydenham Amateur Camera Club, the members of which have until recently met at each other's houses, have taken up quarters at the "Greyhound," Sydenham. Mr. H. H. Gray, Hon. Secretary of the Club, 9, Thicket Road, Anerley, S.E., will be glad to hear from gentlemen who may be disposed to join the Club. We do not often fall out with the word "amateur," but when it is used as a prefix to either a camera or a club it seems out of place, as in the case of the Sydenham Amateur Camera Club.

OUR readers, we feel sure, do not quite understand the advantages of the "Lantern Slide Exchange" column. They only require to be known to be appreciated. In that column we allow our readers to advertise the slides they are willing to exchange, *free of charge*. By this means sets will be easily made up, and much help given to amateur photographers all over the world. We shall probably offer the same opportunities for the exchange of negatives,



and shall be glad to have the views of our readers upon the matter.

WE very much regret to hear that Mr. John A. Hodges is compelled, owing to ill-health, to give up his position as Hon. Secretary of the West London Photographic Society. The Society not only owes its present prosperity mainly to the exertions of Mr. Hodges, but its very existence is due to his spirited action. The starting of the Society is now a matter of history, and those who are wishful to know how Mr. Hodges worked, will find it recorded in the back numbers of the AMATEUR PHOTOGRAPHER. We hope that if Mr. Hodges has more leisure he will have better health, and, at least, that he will have some time to devote to the practice of photography, in which he has at present gained considerable distinction. We should perhaps add that Mr. H. Selby, of 42, Ladbroke Grove Road, Bayswater, W., will take up the work of Hon. Secretary to the West London Photographic Society, and that his brother, Mr. L. Selby, will assist him.

THE Louth and District Photographic Society have considerably increased their membership, mainly through the holding of a *free* photographic exhibition, at which the AMATEUR PHOTOGRAPHER Monthly Competition photographs and the 1890 Prize Slides formed part of the show. Beginners' classes have been started and demonstrations are given at frequent intervals.

THE 1890 Prize Slides are, to use a rather expressive term, "waltzing about" the kingdom, giving pleasure wherever they are shown. Were we to publish an account of all the kind things that are said about them, and reprint the appreciative notices that have appeared, we should be obliged to set aside a column every week. Although the 1890 slides are good, we are quite satisfied that the next competition will far surpass them. We hope very shortly to publish rules, conditions, etc.

WE note that at the Friday evening meeting of the Royal Institution, on the 23rd inst., Mr. Alfred Watkins exhibited his Exposure Meter (with examples of its application); Messrs. Green, Cross, and Bevan their Diazotype printing process; and Mr. J. R. Gotz his new camera. Lord Rayleigh was to have given a lecture on "Some Applications of Photography," but was unable to attend.

THE paper read at the meeting of the Society of Arts last week was of some interest, as suggesting a field for experiment and investigation in the direction of photography in colours. The subject of the paper, which was read, with a demonstration, by Messrs. Green, Cross, and Bevan, dealt with the new process of Diazotype, which may be briefly described as follows: The process consists of three stages: (1) Drying or coating the surface upon which it is required to photograph with a particular compound (primuline), which is then (2) converted into a photo-sensitive derivative (by treatment with nitrate of soda), and (3) exposed to the light under the usual conditions for giving the picture; (4) converting the sensitive compound wherever it survives, through having been protected by the shadows of the object photographed, into colouring matters (by the use of preparations of aniline colours), and thus the picture is developed from the weakly-coloured sensitive compound into well-marked shades of red, orange, brown, purple, or blue; and these shades being formed in stable colouring matters, the picture is at the same time fixed. The process can be

used on velvet, silk, linen, and other fabrics, and very beautiful results, even in figure studies, were shown.

A LIVERPOOL contemporary publishes the following practical joke, which was recently played on a well-known amateur:—

A few days ago Mr. J. T. Ellerbeck, of Liverpool, who is well known as a very able photographer, received a post-card from the Land of the Midnight Sun, addressed—

*Great Photographer of  
Norwegian Scenery, etc.,  
Residing in Liverpool.*

Mr. Ellerbeck has for a number of years gone annually to Norway to photograph the magnificent scenery there, and in the Scandinavian country is known far and wide. Mr. Paul Lange is also well known to be a very able photographer, and he, too, has photographed Norway, though not to the extent that Mr. Ellerbeck has. However, a mutual friend of the two gentlemen, seeing an announcement in the daily papers of the "Great Photographer" post-card, thought he'd play a joke, so he perpetrated the following envelope and posted it:—

*To the Greater Photographer of  
Norwegian Scenery in Liverpool,  
Paul Lange, Esq.,  
Dods' Buildings,  
Liverpool.*

And now Mr. Paul Lange and Mr. J. T. Ellerbeck are hunting that jokist down with shot guns and grappling irons.

#### "EXIT EMERSON."

IT has always been the opinion of many thoughtful workers that the doctrine of "fuzziness," particularly in the heyday of its influence, operated as a kind of *ignis fatuus* to the earnest student of pure photography. That an art which is especially and peculiarly adapted to the portrayal of nature with minute precision and brilliant definition should seek as its highest manifestation the representation of vague suggestions, was felt to be a glaring anachronism; it was so violently out of keeping with the obvious genius of the art. Yet many have, possibly in the main through the persistent teachings of Dr. Emerson, adopted the above heresy; not the least offender being, in our opinion, the Photographic Society of Great Britain, which, at the last Pall Mall Exhibition, stamped with its approval a number of works characterised by blur and mist.

The photographic world now learns with considerable surprise that Dr. Emerson has, to use his own words, made a dust-heap of his well known volume entitled "Naturalistic Photography," and has renounced all his previous peculiar views. Much as he has, in our opinion, hindered the progress of photography by his now recanted teachings, he has still more injured it by the bitter and desponding words which he has included in his renunciation.

In the past he compared "photographs to great works of art, and photographers to great artists." Now, overcome by the Giant Despair, he can hardly think too little of art photography.

After this *bouleversement* we are not surprised to read that he derides the rules of composition, nor that he considers "the eternal principles of art . . . mere catch-words." These opinions should convince Ruskin and his like that they lag superfluous upon the stage of life. Dr. Emerson proceeds as follows:—"It may be asked, then, what theories on art I have? I answer, at present *none*. . . What do I think of writings on art and art criticisms? Mistakes."

We are greatly inclined to agree with him in this last: that is, as far as he is personally concerned, if he really has no theory on art left to him. Such being, according to his own words, the case, why should he so ruthlessly endeavour



to smother the hopes of other students by a hailstorm of assertion which, if undissipated, would relegate photography to the perdition of a sham art?

Is there a fly in the ointment, or has Dr. Emerson nothing to interpret his thoughts with but acids and bitters? Whichever may be the case, he has tired of searching for Dame Nature in an artificial fog, and now writes this petulant jeremiad. What he in so many words says is this, "I, even I, have failed; therefore, ye little fishes, there is no hope for you; how can a tadpole succeed where a mighty leviathan has suffered inglorious defeat?"

Thus from the mountain of optimism has he fallen into the pit of pessimism, and there with all kindness we must leave him in a species of dark purgatory until such time as he is once more able to ascend to the light of day, and has become fit to re-enter the paradise of photography! We do not by any means "rub our hands with small-souled glee," but have read this melancholy confession of weakness more in sorrow, more in pity than in anger, and not at all in joy.

Before concluding, we must regret that Dr. Emerson has not seen fit to notify his change of views more gracefully than he has chosen to. Why this needless dealing out of thunderbolts? What boots it who initiated the naturalistic cult when the man who claims to be "sole inventor" declares it to be worthless? To squabble over what is declared to be valueless is surely "much ado about nothing." An epitaph with which Dr. Emerson is credited describes "Naturalistic Photography" as dying with "a gibe on its lips," a most undignified and unmannerly way of giving up the ghost. To us it seems that its end is distinguished by the sting in its tail, a sting which, like the last effort of an expiring ephemera, it seems to thrust into the body of the amateur. Fortunately for the cause of art-photography, its future does not, nor ever did, depend upon the teachings of Dr. Emerson or any other individual. Just as he has failed to elevate an eccentricity into the position of a photographic dogma, so now his *ipse dixit* will fail to persuade us and others that photography is only a lowly handmaiden of art, a kind of scullion wench merely fit to clean pots and pans for the painter of pictures.

Let us all not forget that art-photography is still in its teens; let us remember that within the past few years it has made great strides; let us hope and believe that it is destined to advance in the near future as much as it has in the past. How far this advance will be maintained it is hard to prophesy, but anyhow we may all confidently expect that art-photography will travel along the road which leads to the temple of art, a long, long distance beyond the spot where Dr. Emerson has lost heart and fallen by the way.



#### ROUND THE WORLD WITH A CAMERA.

On Thursday, January 22nd, a lantern exhibition on a really gigantic scale was held at the International Hall, Piccadilly Circus, on behalf of the Liberty Library. Mr. Liberty, of the well-known Regent Street firm, having been introduced in a few well-chosen words from the Chairman, proceeded to deliver a most able, interesting, and amusing account of a trip round the world which he had taken in company with Mrs. Liberty during the course of the year 1889. He began his remarks by saying that it was owing to the photographic energy of Mrs. Liberty that he was enabled to show them so many slides, and dwelt upon the additional interest that is lent to such a tour as theirs by the presence and frequent use of what he chose to term a "scientific toy." In addition to the whole-plate camera, they carried a Kodak, and a few of the slides shown on the fifteen-feet screen were from Kodak negatives and illustrated the work of that truly "scientific toy." Some 150

slides in all were passed through the lantern, beginning with Egypt and the Suez Canal, passing on to Ceylon, then to the Straits Settlements and China. Unfortunately, almost the whole set of the Chinese negatives were spoilt, the glass ones being smashed to pieces by being packed in grooved boxes (tourists, beware!), and the films (Eastman strippers) being spoilt by a terrible epidemic of damp spots; the few, however, that were saved were of particular interest. Passing on to Japan, an admirable series of pictures appeared on the screen, Nagasaki, Tokio, besides some of the less frequented parts of the country, being freely illustrated. At Nagasaki Mr. Liberty went to a native photographer, Jens by name, to have some of the plates developed, and was kept so long waiting while they were being finished off that he very nearly missed his steamer; an account of his adventures on this occasion being most graphically given. Some of the pictures of a few out of the 13,000 temples of Tokio were first rate, and the street scenes, flower studies, and genre groups brought the characteristics of Japan vividly before the audience, and did Mrs. Liberty great credit as a photographer.

There seems to be no difficulty met with in photographing in Japan, the priests even being quite agreeable, and offering no obstacle to the photographing of their temples. More trouble is experienced in China, especially away from the forts, for in the interior every foreigner is scowled at and called a foreign devil. Some of Mrs. Liberty's pictures of Japanese gods, too, were most interesting, that of the Rheumatism God and the Japanese Venus weighing 450 tons, being quite unique and executed with much technical skill. Passing on across the Pacific, the audience were introduced to the magnificent natural scenery of Western America and the Yosemite Valley, Mrs. Liberty's rendering of the marvellous Mirror Lake in the latter district being specially notable. The last slide shown was one of the statue of Liberty in New York Harbour, *apropos* of which Mr. Liberty made some admirable remarks on the subject of freedom generally, as conceived by our American cousins and ourselves, and drew attention to the fact that the statue points across the Atlantic to the shores of Great Britain—the true home of freedom. The series of slides shown forms but a small portion of the whole set of photographs executed by Mrs. Liberty, and, considering that she had very little acquaintance with photography before starting, it speaks volumes for her skill and energy that she should have been able to bring back so excellent a collection. Most of the scenes were very well chosen, and showed considerable artistic capacity; in some instances Mrs. Liberty introducing the camera where a more experienced worker would, perhaps, have feared to venture.

Mr. Liberty's remarks and explanations fully supplemented the pictures, and to say that he kept an audience of about 1,000 people intensely interested for two and a half hours is a sufficient tribute to his powers as a lecturer. The meeting terminated with the usual vote of thanks.

The whole entertainment shows how much pleasure may be given to others by an intelligent use of the camera, supplemented by the optical lantern, and serves to illustrate the fact that of all hobbies that of photography is the most unselfish, and, besides being a scientific pursuit, can be made the means of affording a vast amount of pleasure to others.



**International Annual of "Anthony's Photographic Bulletin."**—The fourth volume is in active preparation, and will be published early in May. The English editor is Mr. W. Jerome Harrison, of 365, Lodge Road, Birmingham. Some of the best workers in both hemispheres have already promised contributions, and there will be about twenty high-class illustrations.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER III.

*Fig. 1.* In commencing a composition, it is customary to mark the middle of the space, for the purpose of arranging those points we consider of most importance to the subject; dividing the picture for the regulation of the masses of light and shade, of ascertaining and fixing the horizontal line, etc. This mode of constructing the composition is often suggested from the perspective effect requiring a length of line, thereby obliging us to place the point of sight at one side of the picture: sometimes from the group requiring a large space; which a diagonal line secures, as in the elevation of the Cross by Rubens, or from the conduct of the light, as in his picture of the Descent from the Cross, etc.

Cuyp (fig. 1), in adopting this mode of composition in most of his pictures (which are generally Sunset or Sunrise), places the focus of light at the bottom

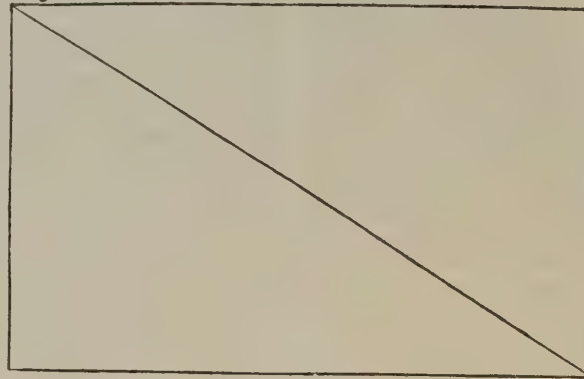


FIG. 1.



FIG. 2.—CUYP.

the pictures of Cuyp, Rubens, and Teniers, where the figures, landscape, and sky are all on the same side of the composition, that a rich and soft effect is produced; the strong light and dark touches of the figures telling with great force against a background of houses, trees, etc., which are prevented from being harsh and cutting, by mixing their edges with the clouds, or dark blue of the sky. This doubling of the lines (if I may so express it) gives a picture that rich fulness which we often perceive in a first sketch, from its possessing several outlines.

Those who imagine, that, by thus throwing the whole composition on one side, a want of union will be produced, will be convinced of their error by perceiving how small an object restores the balance (fig. 2); since, by its being detached and opposed to the most distant part, it receives a tenfold consequence.

*Figs. 3 and 4.* In these compositions Potter has made use of the sky as a background, by which mode the high lights of his ground have more value, and it is rendered less harsh and cutting; which is the case with his famous picture of the Bull,

the figures in which are brought up against the light side of the sky. If deception and strong relief were all he aimed at, he has gained them both, though



FIG. 3.—P. POTTER.

of the sky, thereby enabling the distant part of the landscape to melt into it by the most natural means; while the strongest part of his sky, being at the opposite angle, produces the greatest expanse, and mixes and harmonises with the dark side of the picture. Thus the eye is carried round the composition, until the two extremes are brought in contact, the most prominent with the most retiring.

In compositions constructed on this principle (particularly where the landscape occupies a large portion), many artists carry the lines of the clouds in contrary direction, to counteract the appearance of all the lines running to one point. Thus using the darks of the cloud, etc., to *antagonize*, as it is termed, may apparently produce a better equipoise, but sacrifices many advantages; for we observe in many of

at the expense of some of the higher qualities of the art, "a melting and union," as Reynolds terms it, of the figures with the background. The art is now too far advanced to allow us to be gratified with violent contrast; and a *small portion* of the group coming firm off the ground, is found to be sufficient to give the appearance of natural solidity to the whole.



FIG. 4.—P. POTTER.

In figures 2, 3, 4 are given illustrations of balance, a principle which will be found running through all good composition. In 2 and 4 the diagonal forms are balanced by dark objects coming before and opposing the greatest distance. It is only necessary to imagine the boat in fig. 2, and the cow

in fig. 4, absent, to see at once the great value of these balancing spots to the composition. In fig. 3 balance is



obtained in a different manner. Here we find the line of the tree opposing the diagonal, and the white cows are relieved against a dark sky just as the dark spots in the two other illustrations are relieved by the light sky and distance. The most eminent landscape painters have used this form of composition with its numberless varieties, and it will be found of the utmost value to the photographer. Many painters have found it possible to give what may be called an endless variety to sameness by their performances on this keynote. Turner's pictures may be studied with advantage for illustrations of balance, and the use of a small portion of strong dark or light, primarily for balance, and then to give luminosity and atmosphere to other parts. This great landscape painter carried this principle out in all he did, even to the most insignificant sketch. For examples—in the "Fighting Téméraire," in the National Gallery, notice the extreme value of the dark buoy, and, as a variation, that small speck, the dog, in "Crossing the Brook." These are two of his great pictures. Now turn to any of his vignettes, such as those illustrating Rogers' Italy and Scott's poems, and notice how the great principle is carried out in the tiny engraving. It would be a good lesson to the student to walk through the National Gallery and examine the pictures for illustrations of the use of this principle of balance, and for nothing else at present. He will not find it in the earliest examples which followed more or less the Byzantine Convention, but it exists in all others. For the purposes of photography the Dutch and English schools would give the most profitable lessons, especially, as I have said, the works of Turner. The budding artist who is inclined to "have nothing to do with the tyranny of rules" should remember that Turner was a very great and original genius, who might have been above and beyond all rules, and that, nevertheless, he obeyed them.

(To be continued.)



## Photographic Work for the Winter Months.

BY T. PERKINS, M.A.

### CHAPTER III.

#### INDOOR WORK—IMPROVEMENT OF NEGATIVES.

THERE are many days in winter when fog, or rain, or deep snow prevents the photographer from doing any work out of doors, or making his way about the country in search of interiors, days when the fireside is the most comfortable place, when, at any rate, such work as can be done at home is the only kind possible. But the very fact that we do not care to go beyond the front door, save when compelled to do so and have plenty of time on our hands, gives us the opportunity of doing some photographic work carefully which we might be inclined to hurry over in the summer.

First comes the improvement of negatives taken during the summer; proofs have probably been already printed, and no doubt in some cases have revealed the fact that better prints might be obtained from the negatives if the latter were subjected to some manipulation. It often happens when we have had a long tramp on a dusty day, or when the plates in their backs have been well shaken on a railway or cycle journey, that dust has made its way to the surface of the plate, however carefully the plate and slide were dusted in the dark-room just before setting out, and multitudes of tiny transparent spots show themselves on the developed plate wherever the little specks of dust have shielded the film from the light passing through the lens during the exposure. Now these will, of course, print dark, and if of any size will completely spoil the print. One thing may be noticed here, namely, that these transparent spots are not always so large as they seem when the negative is held up to the light, for, owing to the phenomenon

called irradiation, bright objects on a dark ground look larger, and dark objects on a bright ground look smaller than they really are, so that some of the smaller dust spots occurring in a bright part of the picture will, when printed, be invisible, unless the picture is carefully examined at close quarters. Hence, we need not trouble ourselves about these, but the rest must be spotted out. And a most tedious process spotting is; every hole must be attended to by itself. I find a small well-pointed brush of red sable, which is stiffer than brown sable or camel hair, charged with a little water colour is the most useful instrument for getting rid of these annoying spots. Care must be taken not to have the colour too liquid, or it will, when dry, set in the form of a tiny ring with a semi-transparent centre; the colour should be just moist enough to allow the brush to work freely. We should choose our colour to match that of the negative as nearly as possible. Many persons would naturally choose a dense, non-actinic colour like vermilion, and rightly so if the spot occurs in a part of the picture which prints absolutely white, but in most cases it will be best to allow a little light to pass through the paint, hence some neutral tint, Payne's grey, or a mixture of a transparent blue with sepia or some other brown, will be found most useful. These colours will also be found useful when it is necessary, as it sometimes is, to block out a defect of considerable size. This may often be done with advantage on the back of a plate. For spotting, the most convenient way is to use a retouching desk, but a very good substitute may be made by blocking up a window-pane with a sheet of brown paper which has an aperture in the middle smaller than the negative; in front of this opening the different parts of the negative which require spotting may be successively held and pressed firmly. Oiled paper or thin tracing paper may sometimes be used to correct defects in negatives. I am not now speaking of using this as a dodge to heighten effects, for about the legitimacy of this I have serious doubts, but simply to get rid of mechanical defects caused either by faulty films or accidents during or after development. Of course, no one ought to fail to make his developer flow uniformly over the whole plate, but such accidents will sometimes occur, especially when a plate is developed away from home in an awkward or insufficiently lighted dark-room. If a portion of the plate is not wetted with the developer at first, the rest of the plate gets a start, and although the mistake may be soon found out, the patch will have less density than the rest of the plate; a little piece of thin paper stuck on the back of the negative, and afterwards oiled if necessary, will often completely equalize the density so that the print does not show the defect. A little working with a black lead pencil on the surface of the film will sometimes be useful in softening a line caused by the developer not flowing freely all over the plate at first.

The next improvement in negatives to be considered is local reduction. When photographing landscapes I always prefer to get the clouds present at the time of exposure shown on the print, rather than to print them in from cloud negatives, which as a rule introduce falsity into the print; but it is often impossible to retain these, they show beautifully in the earlier stages of development, but become blocked up before development is complete, but they may nearly always be recovered by the judicious use of a reducer carefully applied by means of a brush after the negative is dry. The same process is often needful in the case of windows in interiors. For such work I prefer to use films of celluloid instead of glass plates. Halation, properly so called, ought not theoretically to make its appearance when these films are used, but I have many times met with appearances closely resembling halation. I am inclined to attribute these to floating dust or mist inside the building,

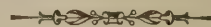


lit up by the light streaming in through the windows. In a negative of St. Mary's Church, Leicester, taken last summer, this effect is curiously shown. The chancel was well lit, but across the windows ran the screen dividing the nave from the chancel; this in the negative and print is clearly defined; not the slightest phenomenon resembling halation is seen here, but close up to the screen on either side of the windows there is an appearance of fog, due, I believe, to floating dust lit by light pouring in from the bright east windows. The tracery had disappeared, but an application of the reducer enabled it to be seen in the negative, so that it printed on the paper. And altogether, apart from halation, it stands to reason that a window for which an exposure of a few seconds would suffice must be enormously over-exposed when the exposure of fifteen or twenty minutes needed for the rest of the picture is given, so that the windows are often blocked up by the time the development is finished, and reduction will be necessary in order to get detail into them.

Some negatives will be improved by general intensification or general reduction. As a rule, if I have any doubt while developing about the intensity of the negative, I prefer to err rather on the side of over-density than under-density, as I can make more sure of reaching the desired density by reduction than by intensification.

Another defect, and one that greatly offends the eye, which we meet with is the distortion caused by tilting the camera, shown by vertical lines converging, generally towards the upper part of the picture. This may be due to sheer carelessness in not accurately levelling the camera when taking the original negative, or to the necessity of taking the picture in a hurry to secure some special feature, or to a hand-camera not furnished with a level being used, or again one may deliberately tilt the camera without using the swing-back to secure sharpness without the use of a small stop, when it would be impossible to give the exposure that would be required with a small stop, knowing well at the time that the distortion so caused can be cured in a manner to be described, whereas want of sharpness introduced by the use of the swing-back cannot be cured. When the distortion is thus purposely introduced, the angle the back of the camera makes with the vertical should be measured at the time of exposure, and should be entered in the note-book. We must then, at our leisure, make a corrected transparency from the distorted negative. It is easy enough to get the vertical lines parallel, either by inclining the negative to the axis of the lens of the copying camera, keeping the transparency plate perpendicular to the axis, or by keeping the negative perpendicular to the axis of the lens and inclining the transparency plate; but in either case the correct proportion of width to height will be destroyed—in the former case the height will be diminished in proportion to the width, in the latter it will be increased—but the correct proportion will be secured if the two methods are combined, and the negative and transparency plate are equally inclined in opposite directions to the axis of the lens of the copying camera. I have found that the following method will give a result sufficiently accurate for most purposes. Suppose that the camera had been tilted upwards when taking the original negative, then place the negative upside down in front of the copying lens, and swing the top of the plate so placed backwards through an angle equal to about three-quarters of the angle which the camera back, when the negative was taken, made with the vertical. Then swing the back of the copying camera in the opposite direction through the same angle. In practice it will be well to have a series of parallel straight lines ruled on the focussing screen of the copying camera, and then to swing the back, if necessary, a little on one

side or other of the position above described, so that the vertical lines of the image on the screen coincide or are parallel to the lines ruled on the screen. It will be then found that the want of parallelism in the vertical lines will be got rid of, while the correct proportion between width and height will be secured. In those cases where the tilting was accidental and its amount was not measured, the requisite amount of swing when making the transparency must be found by trial. It will be seen that an exceedingly small stop need not be used in copying, as the image of that part of the negative which is farthest from the lens will be formed on that part of the transparency plate which is nearest to the lens, hence with a moderate sized stop, all will be in correct focus together. Having secured a transparency free from distortion, it remains, either by contact printing by artificial light or by copying in the camera by daylight, to make a negative from which prints may be made by any method of printing which may be desired. I have now shown how the best may be made of any negatives in our possession, and in the next chapter I shall give a few hints on the way in which during the dull days of winter positive prints, lantern slides, and enlargements may be made from them.



## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 43.)

ONE of the most remarkable properties of water is its great solvent power, and, as a consequence, natural water is always more or less impure, and perfectly pure water can only be obtained with great difficulty, even in a laboratory. The water occurring in nature may be classed under various heads.

*Rain water*, resulting from the condensation of the aqueous vapour in the atmosphere, is the purest form of natural water, but even it contains certain substances which it has dissolved on its way through the air. In the country it contains practically nothing but small quantities of the gases dissolved from the atmosphere; near the sea it contains in addition small quantities of the sea-salts which are always present in the air of such localities; in towns it contains acid vapours as well as the ordinary atmospheric gases, and particles of soot, dust, etc.

*River water* consists largely of surface drainage—i.e., rain water that has run over the surface of the land without sinking into the soil—with a proportion of spring water, varying according to local conditions. It contains the same substances that are found in spring water, but in lower proportion, owing to the dilution and surface drainage, the more prominent constituents being determined by the nature of the rocks through which the river flows. If the bed of the river consists of hard granitic rocks, the proportion of dissolved matter will be very low, but if the bed consists of chalk, marl, etc., it will be high. In addition to the dissolved matter, river water always contains insoluble suspended matter in the shape of mud, sand, etc., the quantity being very small in some cases and very large in others, especially when the river is rapid and its bed is soft.

*Spring water* is rain water that has passed through the soil and rocks, accumulated in underground caverns and fissures, and finally come to the surface along natural cracks or through a porous rock such as sandstone. On its way through the soil and rocks, the water has dissolved some of the substances which they contain. It is found that all spring waters contain pretty much the same substances, though their absolute quantity and relative proportions vary greatly in different cases. They are the carbonates,



sulphates, chlorides, and silicates of calcium, magnesium, sodium, potassium, and iron. In a limestone or chalk district the proportion of calcium carbonate is high; in a marl district the proportion of sodium chloride and calcium sulphate is high; in a magnesian limestone district magnesium carbonate will be present in considerable quantity; if there is a bed of salt in the neighbourhood, the water will probably contain a high proportion of salt. The total quantity of solid matter in a spring water varies in different localities from two or three grains per gallon (3 to 5 parts in 100,000) to 50 or 60 grains per gallon (70 to 90 parts in 100,000).

When a spring water contains so much dissolved matter that it has a distinct taste, it is called a *mineral water*, and in some of the strongest mineral waters the total quantity of solid matter is more than 1,000 grains per gallon (1,400 parts per 100,000). They are classified, not according to the constituent which they contain in greatest quantity, but according to one which gives them a special character. The chief groups are *alkaline waters*, containing sodium carbonate; *sulphur waters*, containing hydrogen sulphide ( $\text{SH}_2$ ), or sodium hydrosulphide ( $\text{NaSH}$ ), or both; and *chalybeate* or *ferruginous waters*, containing iron carbonate ( $\text{FeCO}_3$ ).

Well water has the same composition and properties as spring water. The water supplied to many large towns, especially in the north, is upland surface water, *i.e.*, rain water that has run over the surface of the moors and uplands, and has been collected and stored in large reservoirs. It usually contains a comparatively low proportion of dissolved matter.

The suitability of a water for drinking purposes does not depend so much upon the total quantity of solid matter that it contains (though it is desirable that this should not be high), but upon the presence or absence of poisonous metals, such as lead, and especially upon freedom from contamination with sewage and decaying animal or vegetable matter. It is established that the presence of animal matter or sewage in a drinking water may give rise to illness of the most serious kind, and it is essential that the greatest care should be taken to prevent such contamination. Access of sewer gas to water stored in a cistern may produce very serious results. River water is unsafe, unless taken at a considerable distance from a town or village, and water from shallow wells is also often dangerous, especially if the well is sunk through porous rock, owing to the possibility of the percolation of liquid sewage, etc., through the rock into the well.

The suitability of a water for technical purposes depends chiefly on the quantity and nature of the dissolved solid matter. If the proportion is high, and especially if compounds of magnesium and calcium are present in large quantity, the use of the water for many purposes is attended with considerable difficulties.

Water containing compounds of calcium and magnesium is "hard," *i.e.*, will not dissolve soap and make a lather, but decomposes the soap and forms a curdy insoluble precipitate. Soap is a compound of a fatty acid (oleic or stearic) with sodium (hard soap) or potassium (soft soap), and when the soap comes in contact with a calcium or magnesium salt the fatty acid of the soap combines with the calcium or magnesium to form an insoluble compound, whilst the sodium or potassium of the soap combines with the acid previously united to the calcium or magnesium, thus—

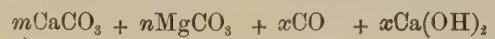
Sodium oleate + calcium sulphate = calcium oleate + sodium sulphate.

Potassium stearate + magnesium carbonate = magnesium stearate + potassium carbonate.

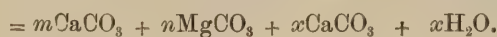
Some hard waters when boiled deposit calcium or magnesium carbonate, or both, and become softer. Hardness

that can be removed in this way is called "temporary hardness." Other hard waters are not affected by mere boiling, and are said to be "permanently hard," the hardness being due to the presence of calcium or magnesium chlorides or sulphates which are kept in solution simply by the solvent action of the water.

Temporary hardness is due to magnesium or calcium carbonate or both. These compounds are dissolved by pure water to a very slight extent only, but when the water contains carbon dioxide, as is commonly the case, it can dissolve much larger quantities of the two carbonates. If now the water is heated, the carbon dioxide is expelled, and consequently the calcium or magnesium carbonate is precipitated. A similar result follows if the carbon dioxide is neutralised by lime or any other base, and upon this fact is based Clark's process of softening waters, which is applicable only to temporarily hard waters. Lime-water, containing in solution calcium hydroxide  $\text{Ca(OH)}_2$ , is added to the hard water in quantity sufficient to combine with all the carbon dioxide. Calcium carbonate is thus formed and is precipitated, and at the same time the carbonate or carbonates kept in solution by the carbon dioxide are also precipitated. The general equation representing the change is as follows—

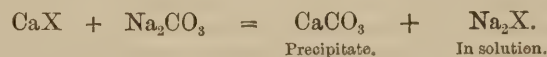


In the water.



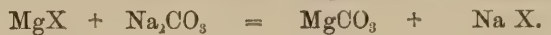
Precipitated.

The process is readily applied on either a large or a small scale. It is not applicable to waters containing chlorides and sulphates of calcium and magnesium. In these cases, however, the greater part of the calcium or magnesium can be removed by mixing the water in a tank with the proper quantity of soda-ash (sodium carbonate), allowing the precipitate to settle and drawing off the clear water. The calcium or magnesium is precipitated as carbonate, an equivalent quantity of sodium chloride or sulphate being left in solution, but for many purposes the presence of these salts is of no importance, or, at any rate, is much less injurious than the presence of the calcium and magnesium compounds. The reaction is represented by the equation—



Precipitate.

In solution.



Precipitate.

In solution.

where X stands for the acid originally combined with the calcium or magnesium.

(To be continued.)

## Photo-Micrography.—III.

BY ANDREW PRINGLE.

### OPTICAL APPARATUS—OBJECTIVES, OCULARS, CONDENSERS, BULL'S EYES.

THE choice of objectives is a very important matter for photo-micrography. The first essential is that the objectives be so constructed that the visual and actinic rays come to a focus on the same plane; in other words, that the lenses be "corrected for photography;" otherwise, however sharp we may see the images on our focussing screen, we shall not find it sharp on our negative. All opticians of repute now make objectives properly corrected in this respect.

It is necessary to know the exact magnifying power of



our objectives, if we wish to know with scientific accuracy the amount of our magnification. Objectives are called "one-inch," "half-inch," "one-twelfth," etc., from comparison with supposititious "single" lenses, and as a rule the focal length of objectives is quoted nearly accurately, but seldom quite accurately. A one-inch "O.G." (object-glass) will project an image such that at ten inches from the posterior conjugate focus of the objective, the projected image has a linear magnification of ten times the original object; a half-inch at the same distance will give twenty diameters of magnification, and so on. The image projected by an O. G. alone is invisible to the unaided eye, and at the same point behind the objective—the distance being determined by computation of the normal view-point of the human eye—we place an ocular, which not only renders the image visible, but further magnifies it. Sometimes this distance of normal vision is taken as ten inches, sometimes as about seven, so we have "long" and "short tube-lengths," 160 millimetres being the accepted Continental tube length, 250 mm. being a length often adopted in Britain. Of course, the longer the tube, with given O.G. and ocular, the greater the magnification, and the farther the ground-glass of the camera is from the O.G. (with or without an ocular), the greater also the magnification.

"Definition" and "resolution" depend, *ceteris paribus*, on "angular aperture," or "numerical aperture" (N.A.) of the objective. For explanatory purposes, definition is usually defined as "sharpness of image," and resolution as the power of *separating visually very close markings*; but evidently the two qualities are one and the same, for without definition a glass cannot separate details. Resolution, then, increases directly as numerical aperture, and this is a matter not of opinion, but of mathematics. Again, N.A. will enable a glass to resolve a given number of lines-to-the-inch with rays from a given part of the spectrum, and a theoretically correct table of these data will be found in every number of the *Royal Microscopical Journal*. Clearly, then, perfection of objective is to be looked for in larger numerical aperture or "angle." (It seems unnecessary here to discuss the meaning of, and the reasons that led to, the term "numerical aperture;" suffice it to say, that Abbé introduced the term in order to more accurately compare the apertures of "immersion" and "dry" objectives. A dry objective has a limit of 180 degrees of "angle," but immersion, while it cannot, of course, introduce any greater "angle" than 180 degrees, causes more pencils of light to be included in that angle, N.A. 1 = 180 degrees). But, in the first place, there is a limit of aperture beyond which the optician cannot go with regard to a given focal length of objective without spoiling that objective for general purposes. Thus we cannot get a good one-inch O.G. with N.A. .60, simply because the optician has not yet learned to make such a glass. In the next place, increase of numerical aperture entails *ipso facto* loss of other qualities, the most notable of which is "penetration." This penetration corresponds exactly to what in photography we call "depth of focus," and both in microscopy and in photography the quality is a myth. It is completely impossible that any lens can focus equally sharply two planes at right angles to its optical axis. In plain photography for artistic purposes "biting" sharpness is not desirable, and the larger the picture the less desirable it is. In photo-micrography we have nothing to do with art, and we want the most biting sharpness we can get. In photography, it is argued that there can be laid down a certain limit of confusion-area beyond which we may or may not go. Whether this is right

or wrong, it does not touch *our* question; we must have no confusion area at all. Some microscopists argue that by keeping down aperture we get more *equality* of focus for different planes, and in a sense this is true. We get with low aperture less absolute sharpness on any plane, and so we have no real definition to contrast with fuzziness, and we are deceived into a belief of good general definition. But this is not the system I propose to recommend. My experience is that a lens giving the best definition on one given plane gives also the best definition on adjacent planes, when we come to examine the entire image critically.

Penetration decreases with aperture, but much more with *magnification*, and it is immaterial how the magnification is obtained. An idea has been abroad that by making a negative of, say,  $\times 100$  diameters, and enlarging in the camera to, say, 300 diameters, a result with more penetration will be got than by magnifying to 300 diameters direct with an object glass. This is erroneous both in theory and in practice. The falling off will be practically the same in both cases, and probably in other ways the direct magnification will be the better result. A low-power objective with wide aperture will yield better results, in the matter of penetration, than a higher power with less aperture; and, provided we can get, without over-strain of the objective, as much magnification as we require, we should use a low power with a wide aperture. The "initial power" of an objective I define as the magnification it gives ten inches behind its posterior conjugate focus, and I define as "straining" a lens the use of that lens at a magnification beyond ten times its initial power, no matter whether the strain is accomplished by eye-piecing, "amplifying," or stretch of camera. The best workers only can get a fairly good image at any beyond ten times the initial power of the lens. I never attempt such a stretch when I can help it. Thus  $\times 100$  is quite enough for any one inch O.G.;  $\times 800$  as much as I care to tax the powers of a one-eighth, and I much prefer  $\times 80$  and  $\times 700$  respectively.

The best objectives, both for photographic corrections and for low power and wide aperture combined, are made of new kinds of glass, and are known as apochromatic. They were originally designed by Abbé, and made by Zeiss. They are expensive, very much so, but for the very best results in the highest flights I think they are necessary. Some English opticians make very good apochromatic glasses. I have tried a few, and they were very good. My own objectives are nearly all Zeiss apochromatics, and run as follows, in millimetres of focal length:—70; 35; 24 (N.A. .30); 12 (N.A. .60); 6 (N.A. .95); 3 (N.A. 1.4); 2 (N.A. 1.3). The most useful are those of 70, 24, 12, and 3 mm.

But every reliance may be placed on many glasses made by English opticians, provided the glasses are made and warranted for photography. Powell and Lealand, Swift, Beck, Watson, all sell glasses which I know to be suitable for our work, and certain German firms, notably Reichert, Seibert, Leitz, and others, have agents for very good glasses, many of which I have used, at prices considerably lower than Zeiss'. I understand that Powell and Lealand are making some very fine glasses, but I have not seen them and the price will be high.

The beginner should get a microscopical friend to select object glasses, and they should be taken only on the understanding that they are corrected for photography. The following battery will be ample, in inches of focal length, the aperture being as wide as the purse will permit. 3, 1,  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{16}$ . For bacteria Mr. Swift makes a  $\frac{1}{16}$  oil immersion of very good quality and moderate price. Glasses of  $\frac{1}{4}$  inch and higher powers should have a correction collar, which I shall explain later, but Zeiss apochromatics of

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



3 mm. ( $\frac{1}{8}$  inch) and higher powers have not such a collar. This, also, will be treated later.

The substage condenser must suit the objective. To get the full use of an O.G. of N.A. 1, we require a condenser of N.A. 1 at least. I recommend an achromatic condenser of, say, 140 deg. for easier work (part to be removed on occasion); an achro. condenser of about N.A. 1, as one made by Zeiss (agent, C. Baker, 244, High Holborn); Powell and Lealand's best immersion condenser N.A. 1.4 (expensive), or a non-achromatic condenser usable as immersion or with part removed. But I may say that an object-glass acts very well as a condenser, nothing being needed but a fitting for it in the substage. All condensers should have an iris diaphragm, and various "stops" are sold with a condenser.

A bull's-eye will also be required, and I like the bull's-eye to be on a stand if it is not fitted specially to the photomicrographic apparatus, which is better still. A bull's-eye for general use may have a diameter of about 2 ins., and a focal length as short as obtainable with that diameter. An "achromatic" bull's-eye with short focal length is a very useful instrument.

As a rule the ordinary Huyghenian ocular supplied with a microscope is not adapted for really good work in our line. I recommend the use of either a projection ocular or none. More will have to be said later about oculars and bull's-eyes.

(To be continued.)

## A Renunciation.

DR. P. H. EMERSON has asked us to give publicity to the following:—

### TO ALL PHOTOGRAPHERS.

Loving Brethren that were, I salute you. I owe you one apology, oh! my friends, for in the earnestness of my heart I partly misled you. You, who stuck by me in storm and stress I shall never forget—if any of you, after this renunciation, seek advice, ask and you shall receive of my best. You, enemies, who will now rub your hands with small-souled glee, rub on, till it all ends in imaginary soft-soap. You, whom I have in mistaken zeal attacked, pray forgive and forget.

And now list, I, saner than ever, renounce and abjure all theories, teachings, and views on art written, and first promulgated by me in sundry works, articles, etc., and finally collected in a volume, entitled "Naturalistic Photography." I cast them upon the dust-heap.

I am for the present and future neither idealist, realistic, naturalist, nor impressionist—*photographic impressionist*,\* indeed!—as though all graphic artists were not impressionists, and as if the photographic process could give aught but transcripts more or less literal. Shall I forsooth explain this burning of books?

List, you who have ears to hear and eyes to see.

In the fulness of my heart I dreamed a dream. I thought art might be taught by writing. I was wrong, I confess. I, even I, "the lover of nature"—every one is that now—preached that all art that did not conform to "truth to nature" principle was bad; that was a fatal sermon to many. From this followed again the idea—mistaken alas!—that photography *pure* (not impure, on rough papers, touched up by clumsy hands) was an art surpassing all black and white methods. *Eheu!* That this was ever believed! However, I was sincere, enthusiastic, but mistaken, and I was and am no amateur. I have by the sweat of my brow learned, under a master, something of this thing they call art. Being no amateur, I have therefore left the Camera Club, the home of the "amateur." But, ye reasonable ones in photography—some of you are *that*, true and worthy sons of the goddess Science, who has little to do with the goddess Art—you will ask, and with right, Why this thyness? I respect you, true workers in science—ye Abneys, Dallmeyers, Hurters, Driffields, Vogels, Jones,

Harrisons, Bolas, Waterhouses, Eders, and others. I will tell you, for the vulgar mob of pseudo-scientists have done naught but prove their ignorance and show signs of the itch—the itch for publicity and venom.

To you, then, who seek an explanation for my conduct, art—as Whistler said—is *not* nature, is not necessarily the reproduction or translation of it; much, so very much, that is good art, some of the very best, is not nature at all, nor even based upon it—*vide* Donatello and Hokusai.

The limitations of photography are so great that, though the results may and sometimes do give a certain æsthetic pleasure, the medium must always rank the lowest of all sorts, *lower than* any graphic art, for the individuality of the artist is cramped; in short, it can scarcely show itself. Control of the picture is possible to a *slight* degree, by varied focussing, by varying the exposure (but this is working in the dark), by development, I doubt (I agree with Hurter and Driffield, after three and a half months' careful study of the subject), and, lastly, by a certain choice in printing methods.

But the all-vital powers of selection and rejection are *fatally* limited, bound in by fixed and narrow barriers. No differential analysis can be made, no subduing of parts, save by dodging—no emphasis, save by dodging—and that is not pure photography; impure photography is merely a confession of limitations. A friend once said to me, "I feel like taking nearly every photograph and analysing it." Compare a pen and ink drawing by Rico or Vierge, in Pennel's book. I thought once (Hurter and Driffield have taught me differently) that true values could be obtained and that values could be *altered at will* by development. They cannot; therefore, to talk of getting the values in any subject whatever as you wish, and of getting them true to nature, is to talk nonsense.

It is impossible, in most subjects, to alter your values *as you wish*, and to talk of such things now is mere emptiness and puffed-up humbug.

Some amateurs, following Colonel Noverre's *revival* of rough printing papers *last year* (1889), have thought that salvation lay in rough surfaces. Colonel Noverre's dust-heap was ransacked, and we have heard of a "new departure"—a newer "school," and all the bleat of the overweeningly vain "amateur."

If there can be no scientific basis for an art, as some have asserted, Meissonier can claim to be as artistic as Monet, and Monet as Meissonier. The sharp photographer can assert his artistic rights alongside of the veriest "blottist." So all opinions and writings upon art are as the crackling of thorns beneath the pot. In short, I throw my lot in with those who say that photography is a very limited art. I regret deeply that I have to come to this conclusion. Photography is first of all the *hand-maiden of art and science*. It has and will register new facts of light, form, and texture. Pure photography is a scientific method of drawing, and scientists should work on until a true and literal scientific transcript of nature can be made—this by orthochromatics, etc.

It will interest some to hear what I think of some points that have been vexed questions in a war I have, I regret to say, stirred up. Composition, as understood by Burnet and others, I hold to be fatality itself, though I can appreciate the attempts to meet the difficulties in this matter. The eternal principles of art I have heard so much of are mere catchwords.

*Sharpness versus Diffusion.*—If the work is for scientific purposes, work sharply; if for amusement, please yourself; if for business, do what will pay.

I have (I regret it deeply) compared photographs to great works of art, and photographers to great artists. It was rash and thoughtless, and my punishment is in having to acknowledge this now. Think of the marvellous dexterity of the man who with pencil, pen and ink, or paint and brush, produces a masterpiece, the drawing equal to that of the lens, the tones in harmony, the colour delicate and marvellously beautiful. Read Rood's "Chromatics" for a hint of the manifold difficulties surrounding this subject. Then think of the amateur photographer, who, if clever, can in a few weeks turn out good technical work.

It may be asked then what theories on art I have? I answer, at present *none*. What artists I admire? I answer, all good artists and all good art. To what school do I now belong? None. What do I think of writings upon art and art criticisms? *Mis-*

*kes.*  
A final word. Suggestions have been made that I get some of my ideas from a book called "Naturalistic Painting." I have a

\* "A term consecrate to Charlatans," and especially to photographic impostors, pickpockets, parasites, and vanity intoxicated amateurs.



letter in my possession from an artist, wherein is stated clearly and exactly that Mr. Bate\* had read a paper of mine on "Naturalistic Photography" before his first article appeared in the *Artist*. At the Society of Arts, the other day, a paper was read by Mr. Davison . . . . in which my *old* ideas were freely and impudently bandied about and no credit given me. It was whispered about by my enemies that this person had originated some of the ideas of "Naturalistic Photography." To enlighten the public, I append a quotation from his letter to me on this point. . . . . He is now welcome to my cast-off clothes if he likes—he or anybody else. It is with deep regret I do this thing, and it is only as a duty to myself. I justify myself by stating that I wrote privately to Mr. Davison, expostulating with him for freely appropriating my ideas, and telling him that if he did not give me full credit at the Society of Arts, I should publish a history of the matter. He never replied. He can publish my letter in full if he likes. This was Mr. Davison's reply to a letter I wrote to him and others, asking them if they minded me thanking them in public for their support. His reply is dated from the Camera Club, December 16th, 1889, *only a year ago*. It is, "I AM GLAD AND PROUD TO BE IDENTIFIED IN ANY WAY WITH NATURALISTIC PHOTOGRAPHY, BECAUSE I BELIEVE IN WHAT I UNDERSTAND IT MORE AND MORE CLEARLY IT BE, BUT I DOUBT VERY MUCH WHETHER ANYTHING I HAVE DONE DESERVES RECOGNITION."

I sent a copy of "Naturalistic Photography" some time ago for review to the Editor of the "Journal of the Society of Arts," and it got a bad notice. All the ideas offered the other night were thus offered to the Society *previously*. Lastly, a special speech, read from a paper by a friend of mine, especially pointing out how I had originated these ideas, was not reported as it was read, the printed report giving altogether a different impression from what the speaker said. Those who heard the original can refer to the speech, as reported in the "Journal of the Society of Arts"—not "Artists," as Mr. J. Pennel has aptly described it. This sort of treatment, which is nothing new to me, may excuse some of my bitterly written invectives.

Finally, some of my friends to whom I have recently privately communicated my renunciation have wished to know how it came about. Misgivings seized me after conversations with a great artist after the Paris Exhibition; these were strengthened by the appearance of certain recent researches in psychology, and Hurter and Driffield's papers; and, finally, the exhibition of Hokusai's work and a study of the National Gallery pictures after three and a half months' solitary study of nature in my houseboat did for me.

P.S.—Will every Secretary of every photographic society take four wafers and a sheet of black paper and hide for ever the words "To the Student" in "Pictures of East Anglian Life."

#### L'ENVOI.

Having taken some earnest photographers a little way into the Art world, I feel it my duty to say that, when I have *fully* reconsidered the limited art possibilities of photography and the general philosophy of art, I will write another book; in the meantime, let students avoid all spurious imitations.

#### EPITAPH.

In Memory of

NATURALISTIC PHOTOGRAPHY,

WHICH RAN A SHORT BUT ACTIVE LIFE,

UPSET MANY CONVENTIONS,

HELPED TO FURTHER MONOCHROME PHOTOGRAPHY TO THE

UTMOST OF ITS LIMITED ART BOUNDARIES,

STIRRED MEN TO THINK AND ACT FOR THEMSELVES,

PRODUCED MANY PRIGS AND BUBBLE REPUTATIONS,

EXPOSED THE IGNORANCE OF THE MULTITUDE,

BROUGHT OUT THE LOW MORALITY OF CERTAIN PERSONS IN THE PHOTOGRAPHIC WORLD,

BROKE DOWN THE PREJUDICE OF THE OUTSIDE PUBLIC

AGAINST PHOTOGRAPHY'S VERY SLENDER ART CLAIMS,

ENCOURAGED MANY AMATEURS TO BABLE AND MAKE THE WORDS

"ART," "TRUTH," AND "NATURE," STINK IN THE

NOSTRILS OF SERIOUS ARTISTS,

ENDING BY GIVING A FEW A BRUTAL SORT OF APPRECIATION OF ART,

AND DYING WHEN ITS

ALLOTTED TASK WAS DONE WITH A GIBE ON ITS LIPS,

\* This does not imply that Mr. Bate took any ideas from my paper; on the contrary, I feel sure that his ideas were his own, as were mine.

FOR THE "AMATEUR," THE "PLAGIARIST,"  
THE "PRATING TRUE-TO-NATURE MAN,"  
THE "IMPRESSIONIST," THE "NATURALIST," THE "IDEALIST,"  
AND THE HUMBUNG.

P. H. EMERSON.

NOTE.—In publishing Dr. Emerson's "Renunciation" we have deemed it desirable to omit a few lines the publication of which we consider would be injudicious.—Ed.  
AM: PHOT:

## Notes for Novices.

### ANGLE OF VIEW.

THE angle of view or amount of subject included on a plate with a given lens is one which rarely troubles the beginner. He is generally content to use a lens recommended by a friend, or one which he buys with his complete set. At the same time this is a matter which soon claims attention, and as progress is made, our novice finds he always gets too much in his picture, and even old hands have too often a failing in this respect, viz., a tendency to crowd as much as possible on the plate. Now the amount of subject included by the human eye is not more than 50 or 60 deg., and to use a lens which will include more than this, gives one an idea of a jamming or crowding together of the objects. A very convenient rule and table has been compiled by the Rev. Clarence E. Woodman, which is given in the "Dictionary of Photography" and many standard text-books. A convenient little table to note is the following: When the focal length of the lens and the longest side of the picture are equal, the angle included is 53 deg.; when the longest side of the picture is  $1\frac{1}{4}$  times the focal length, the angle included is 64 deg.; when the longest side is  $1\frac{1}{2}$  times the focal length, the angle is 74 deg.; when  $1\frac{3}{4}$ , the angle is 82 deg.; when twice, the angle is 90 deg.; when the longest side is  $\frac{3}{2}$  of the focal length, the angle is 41 deg.; when  $\frac{2}{3}$ , the angle is 36 deg.; when  $\frac{1}{2}$ , the angle is 28 deg.

### SIZE OF IMAGE.

This is perhaps a much easier method for a novice to decide upon the focal length of his lens, as it is often a fault, discovered sometimes too late, that a lens which has been bought gives such small images of objects, unless one gets quite close to the object, as to be extremely disappointing, for we all of us at first have an intense longing to take things big, to get as much as possible on the plate, and to utilize every scrap of the print. Now, the size of an image produced by any lens is always in exact proportion to its equivalent focus, and if the latter is known, the size of an image can be readily calculated, and thus if we have been using an 8-inch lens and find that the image is too small, we may easily choose a lens of another focal length to give us the exact sized image we want. For instance, as we have been using an 8½ lens on a half-plate and the image is very small—say 2 in.—and we want to get an image that will be 4½ in., a simple rule of proportion will tell us what focus lens to use, because we know the longer the focus the larger the image, and *vice versa*:—

$$\therefore \text{As } 2 : 4\frac{1}{2} :: 8\frac{1}{2} : x.$$

$$x = 18\frac{1}{2} \text{ in.}$$

Obviously from this fact we have a ready method of determining the focal length of a lens by comparing the size of the image of an object produced by it with that produced by a lens of known focal length. For instance, we find that the image of an object with a 6½ in. lens is 3½ in., and with our second lens the image of the same object at the same distance and same standpoint of camera measures 5 in.; another little proportion will give us the focal length of the lens in question. It must be clearly understood that this rule applies only to comparative focal lengths, and not absolute or equivalent focal lengths, unless we measure the image of some distant object.

Utilising this rule, it is possible for us to reckon out how near an object we must get to obtain it of a certain size, and also to reckon whether we can include the whole of the image of an object upon a given sized plate, provided we know or can roughly estimate the size of the said object, which is by no means a difficult operation, and the distance of the object from the lens. Let



us take an example or two to make these points a little plainer. We will suppose we are using an  $8\frac{1}{2}$  in. lens, and are placed on the bank of the Thames, and wish to take a steamer going down midstream. The length of the vessel is 250 ft., the distance between the bank and midstream is 200 yards, and we are using a half-plate camera; we shall find that the image of the steamer will be only  $3\frac{1}{2}$  in. in length.

For the object is 200 yards, = 7,200 in., distant.

Then  $7,200 \div 8\frac{1}{2}$  in., the focus of lens, = 847, the amount of reduction or number of times the focus of lens is contained in the distance.

Now the length of the object is 250 ft. = 3,000 in.

$\therefore 3,000 \div 847 = 3\frac{1}{2}$  in. approx.

This is an application of the simple rule that if the object be  $x$  times the focus of the lens from the same, the image is  $\frac{1}{x}$  the size of the object.

Let us take now another example. We have to take a negative of a house, which, for convenience, we will say is 80 ft. in breadth and 45 ft. high, and we are using a whole-plate camera, and have only a distance of 80 ft. available between the camera and the house, because of a high wall, and consequently we desire to know what focus lens we must use to include it in the whole-plate. Let us fix the dimensions of our image at 6 in. in breadth.  $80 \text{ ft.} = 960 \text{ in.}$ ,  $960 \div 6 = 160$ , the amount of reduction; therefore our image will be  $45 \times 12 \div 160 \text{ in.} = 3\frac{1}{4}$  in. in breadth. We now divide the distance by the amount of reduction,  $960 \div 160 = 6 \text{ in.}$ , the necessary focal length.

What we have been considering are practically examples of the laws of "conjugate foci," which has been explained by Mr. Clement J. Leaper in his current articles. It is extremely easy to apply rules and mathematical formulæ, etc., but a little brochure compiled by Mr. J. R. Gotz, and to be obtained from Messrs. Hazell, Watson, and Viney, will be found of very great value, as it contains "Tables of Conjugate Foci Applied to Photographic Lenses," and includes such for lenses from 3 in. to 36 in. focus. It is useful alike for enlarging, reducing, copying, and also for easily finding out such calculations as we have been considering above.

## Exhibitions.

### MR. SAINTON'S SILVER-POINTS.

A CARAVAN journey through France has provided Mr. C. P. Sainton with subjects for fifty-seven silver-point drawings, and oil paintings to the number of fifty, all of which are on view at Messrs. Dowdeswell's. The artist is at the commencement of what we trust will be a prosperous career. To start with an artistic perception of suitable subjects is no small advantage, and this is possessed by Mr. Sainton. He is the son of parents who, in the musical firmament, shone brilliantly. His father was the late M. Prosper Sainton, a former leader of the Sacred Harmonic Society, and husband of the renowned contralto, Madame Sainton-Dolby. In a gipsy caravan Mr. Sainton travelled from Dieppe, in October, 1889, to Nice, where he commenced the work which is now on exhibition. His object was, he says, to give expression to what he saw (from the window of the caravan, as it were) of the French peasantry, and in this he has succeeded. Regarding, first of all, the silver-points, we find "A Pair I Met" (3) both pleasing and natural. The air of *dolce far niente* is reproduced in the sketch with much skill. "Cinderella" (16) is usually depicted in rather more forlorn condition. The softness of these silver-points—e.g., "Grandmother" (29)—reminds one of the engravings in a high-class American magazine. The distance in "A Pipe after Work" (32) is not very effective, and the "Study of a Baby's Head" (38) suffers from the model's lack of beauty. "The Village Beauty" (41) is charming, despite the slightness of execution. Another graceful example of this artist's work is seen in "The Beggar Boy" (55). In the collection of small oil paintings, which are most appropriately framed, we enjoyed "Among the Pine Trees" (71) and "By the Cottage Fire" (74), the latter being most admirable. Mr. Sainton triumphs over the difficulties of depicting grass in a "Shepherdess" (83). In nearly all his oil paintings the faces are pleasantly and sympathetically suggestive of the Sunny South. "A Lounge on the Hay" (91) is perhaps the most ambitious work here ex-

hibited. Though vivid, it is truthful and certainly pretty. Messrs. A. and F. Pears should not lose the opportunity of contrasting "A Smile en Passant" (101) with their famous "You Dirty Boy." The sunshine through the trees is effective in "A Water Carrier" (102), while "Hay Making" (104) is also praiseworthy. Of all the pictures in this Exhibition, it may truthfully be said, as of work by Mr. G. D. Leslie, R.A., that they would be pleasant companions to their possessors.

### MR. ALBERT GOODWIN'S WATER-COLOURS.

An interesting collection of water-colour drawings—the outcome of the last two years' work by Mr. Albert Goodwin, R.W.S.—is now on view at the Fine Art Society's rooms, 148, New Bond Street. The artist, in a modest preface to the catalogue, acknowledges his indebtedness to Arthur Hughes, Ford Madox Brown, and to John Ruskin, "who took me to Italy in a most princely way, and aggravated me out of the license I had hitherto indulged myself (of colour regardless of form), and made me draw." Certain it is that Mr. Goodwin has succeeded in absorbing the spirit of Turner with all the enthusiasm of the author of "Modern Painters." His picture, "Windsor in Sunset Glow," is admirable, while the detail in "Canterbury" (10) is worthy of the highest praise. We should hardly have imagined that a sky such as Mr. Goodwin depicts in "Wells" (11) is often, if ever, seen in England. The artist draws attention to the fact that part of the building in "Abbeville" is out of the perpendicular. A note attached to "Abingdon" informs us that it is "one of the few drawings here painted from nature; most in this collection being done while the memory of the subject was fresh, but away from the place." This, we fancy, explains the crimson sky in "The Watchers of the Arctic Night." Mr. Goodwin is very happy in his paintings which have parts of Switzerland for subjects. "The Righi Unveiling" is a striking and faithful representation of a scene familiar to many by reason of Mark Twain. "Italy from Switzerland," again, will be recognised as most truthful by those who have viewed the scene. To those who recollect the dramatic story of Warren Hastings, "Aylesford Priory" will be of interest. Mr. Goodwin includes some capital sketches of Dordrecht, as well as some very pretty views of Clovelly. The twilight in "Salisbury Close" needed the naive explanation of the artist, who says, "I do not mean to say that all twilights are as blue as this, but this one was." The after-glow in "Clovelly" (55) is, to our thinking, more truthful. Some of Mr. Goodwin's results of a visit to Devonshire are very charming, while the pictures which deal with the Thames (note especially "A Thames Backwater") seem the very scenes which Mr. William Black has familiarised in his "Strange Adventures of a House-boat." The artist says that at forty-five his style is formed, for good or for evil, and we can only congratulate him on such a style as is displayed in this Exhibition.

### A SUMMER AMONG THE FLOWERS.

A small exhibition, comprising seventy water-colour drawings by Mr. Geo. S. Elgood, R.I., calls attention to the general neglect of flowers as subjects for careful study. And yet the greatest artists will stoop to details in order to correctly portray flowers, as is evidenced by the remarkably finished representation of sea-colewort in Raphael's cartoon, "The Miraculous Draught of Fishes." Mr. Elgood has striven, with no little success, to truthfully depict—

"Large drooping poppies and queen hollyhocks,  
With butterflies for crowns, tree peonies,  
And pinks and goldylocks."

In "The Hall Garden" (63) he has given us a perfect bouquet of old-fashioned flowers. When Mr. Elgood deals with mansions erected three hundred years ago, he succeeds in taking us back to the past, as witness "Brympton" (57); in this dainty picture, an artistic effect is given by two peacocks which would have charmed the late Lord Beaconsfield. The scene of so many pilgrimages—"Ann Hathaway's Cottage"—is admirably painted. Inaccurately, as becomes a paradox, the exhibition was described as comprised of "primroses and prim houses." At all events, every one of these drawings at the Fine Art Society's rooms is a pleasant revival of "the days that were." Miss Hope Temple would, we are sure, find inspiration in "Montacute" for a companion to her song "An Old Garden."



## Notes from the Liverpool Centre.

(By our District Editor.)

STRANGELY enough, at first glance, one of the chief features of local interest here to photographers during the week has been the annual Liverpool Dog and Poultry Show. In connection with this show for the past two years prizes have been given for photographs of dogs and birds. The regret is freely expressed, however, that the competitions have not been given greater publicity. Obviously it is of advantage and importance in shows of this kind to record photographically, and, therefore, truly and accurately, the best "points" of the prize-winners in the animal and ornithological world, and to hand down exactly the distinguishing features and characteristics of different breeds and species of dogs and birds, as such features are taken into account and considered by experts and judges. The giving of prizes for photographs by the Executive of the Liverpool Dog and Poultry Show is the outcome of a suggestion made by Mr. Wm. Tomkinson, Vice-President of the Liverpool Association. In the competition this week the prizes were—For dogs:—First prize, silver medal, Mr. R. H. Lord; second prize, bronze medal, Mr. C. Reid; highly commended, Mr. A. J. Gosling. For birds:—First prize, silver medal, Mr. C. Reid; second prize, bronze medal, Mr. W. A. Singleton; highly commended, Mr. W. Weatherley.

While on this subject it may be mentioned that a good photograph of the famous St. Bernard dog, "Sir Bevidere," which was shipped from Liverpool to America a few days ago, would now be invaluable. "Sir Bevidere" was the attraction at the Liverpool Dog and Poultry Show last year. He has been sold recently for £1,500.

Mr. T. S. Mayne writes to the *Liverpool Mercury* as under:—

"I observe in your to-day's London letter reference to a proposed international photographic exhibition in the season of next year. The concluding words are—'The projected exhibition would then show the best results photography has yet attained on the European Continent.'

"Permit me to state that the exhibition to-day announced in another column, promoted by the Liverpool Amateur Photographic Association, in the Walker Art Gallery, will contain a large, if not the most extensive collection of works from abroad. The entries contain exhibits from Russia, France, Germany, India, Australia, as well as exhibits from the leading workers at home. The schedule of conditions inviting exhibitors' support was freely circulated some two or three months ago in English, French, and German. This is the first time any photographic society in the kingdom has made such an effort to obtain Continental support. The result has been most gratifying.

"The optical lime-light demonstrations of 1888, which gave such pleasure to close on 30,000 visitors, will be a nightly feature, and will be duly announced in your advertising columns later on.

"The opening is fixed for Friday, 6th March, an evening conversation for season-ticket-holders.

THE HONORARY SECRETARY.

"Liverpool, Jan. 23rd, 1891."

Italy may be added to the countries named above. Among the exhibitors are Prince de la Scaletta, President of the Amateur Photographic Society of Rome; Baron Frederick Brantano, of Hanover; the Spanish Vice-Consul at Zurich; Anselm Schmitz, Cologne, Court photographer; and a host of other aristocratic workers in photography located in Odessa, Poltava, Sicily, United States, India, Australia, etc., etc.

Seven new members, including one lady, were elected to the Liverpool Society at the ordinary meeting this week. Among the other business was the exhibition of a series of sixty slides—chiefly cloud effects—by Mr. F. Anyon, and the distribution of medals awarded in the Society's Prize Competition, 1890. The prize winners were: Lantern Slides—1st prize, Mr. Timmins; 2nd, Mr. Phillips and Mr. Sinclair. Whole-plate—1st prize, Mr. W. H. Wilkinson; 2nd, Mr. Cleaver. Half-plate and under—1st prize, Mr. W. Sutton; 2nd, Mr. Tyrer. Enlargements—1st prize, Mr. Thomas; 2nd, Mr. Sutton.

It should be stated that Mr. Anyon took the place of Mr. J. A. Furnivel, of Manchester, who, owing to indisposition, was debarred reading a paper on "The Optical Lantern, and What can be Done with It." Mr. Anyon will be remembered as one of the early prize medal winners in the series of competitions promoted by the AMATEUR PHOTOGRAPHER.

Every Wednesday evening, until further notice, the Society's

lantern will be at the disposal of members who wish to test slides. On Wednesday, February 11th, Mr. Richard Crowe will deal with "Spotting of Prints and Blocking-out of Skies in Negatives, silver, Platinotype, etc."

The Exhibition Committee have passed a resolution to the effect that "the issue of family tickets to members of the Association will be considered by the Committee, on special application being made in each case."

Saturday, January 31st inst., is the closing day for entries—competitive—in the Exhibition.

## Notes from the Edinburgh Centre.

(By our District Editor.)

THE proprietors of the *Daily Graphic* have handed over their unique exhibit at the late Photographic Exhibition in Edinburgh to Major-General Sir R. Murdoch-Smith, the Director of the Edinburgh Industrial Museum, the largest and finest museum in Scotland, where they will be permanently exhibited. It is a fortunate thing that such a valuable exposition of the latest phase of journalism should be placed where it can be seen by thousands of people every year.

The accounts of the Exhibition have not been made up yet, and the total deficit cannot as yet be stated.

Photography and cycling, as is well known, with many go hand in hand, and a very pleasant illustration of that fact was given in the Café Royal Hotel, Edinburgh, last Friday night, when the Waverley Road Club, a vigorous cycling institution, gave their annual smoking concert. Besides the usual entertainment, a very enjoyable display was given of lantern slides from photographs taken by cyclists, showing the scenery of the leading tourist roads in the United Kingdom. The lantern arrangements were made by Mr. J. McKean, Leith, assisted by Mr. J. M. Turnbull, Edinburgh, and everything went off most satisfactorily.

## Apparatus.

MR. C. C. VEVERS, of Leeds, has sent us a very useful little flash-lamp, which he is selling at 1s. 6d., fitted complete with pneumatic ball and tube. The glass tube is charged with magnesium powder, and a few drops of methylated spirit poured upon a gauze mat, the spirit is ignited and the ball squeezed, an instantaneous and brilliant flash being the result. At this season of the year many of our readers are thinking of going in for flash-light photography; they would do well to procure Vever's lamp, which is the cheapest in the market.

THE BLACKFRIARS PHOTOGRAPHIC AND SENSITISING COMPANY, 1, Surrey Row, Blackfriars Road, S.E., have considerably extended their sphere of work, and send us a remarkably cheap set, camera, lens, tripod, and double dark-slide, which, under the name of the "Boys' set," they are selling at 7s. 6d. The camera is well made with cloth bellows body, the lens gives very good definition, and the whole kit is a marvel of cheapness and just the present for boys taking up photography. We have no doubt thousands will be sold. It is not a toy, but a really serviceable quarter-plate kit. The firm are also supplying well-made printing frames as a speciality, which are as cheap as any in the market. They are also offering some specially cheap dark-room lamps at 3s. and 3s. 6d. We should advise our readers to make a call at 1, Surrey Row. The Company have a very perfect half-plate set for £2 12s. 6d., which should be seen by beginners.

A Photographic Exchange Club.—Mr. R. W. Copeman (Kuklos Cottage, Henstridge, Blandford) has asked us to state that he is desirous of forming amongst amateurs—not too advanced—a Photographic Exchange Club, for the mutual exchange and criticism of prints among members on the ever-circulating portfolio system. He has several names, and would be glad to hear from others, to make the number up to ten or twelve, so as to get the club started at once. Rules and nominal subscriptions, to cover expenses, to be arranged by members later on.



## Reviews.

**Optical Projection.** By Lewis Wright. (London: Longmans, Green, and Co.) Price 6s.

This book, which is really a treatise upon the use of the optical lantern for exhibition purposes and scientific demonstration, is a most carefully written work, and although much has been published in works of a similar nature, still, to the professor and student "Optical Projection" must prove of immense service. The first ten chapters treat of the optical lantern mainly for exhibition purposes, viz., Projection—The parts of a lantern—The radiant—The limelight—Preparation of gases—Compressed gases—The oxy-ether and oxy-carbon lights—Lanterns and their manipulation—Screens and other lantern accessories—Slides, carriers, and effects. The remaining chapters are upon the more advanced and scientific sections of "Optical Projection," dealing with The projection microscope—Mechanical and molecular physics—Physiological demonstration—Chemistry, sound—Light, reflection, refraction, dispersion, and colour—The spectrum—Interference of light—Lantern polarising apparatus—Polarised light—Heat—Magnetism and electricity, etc.

In every section the most complete instruction is given; the book is illustrated with some two hundred and thirty wood-cuts, and contains a very complete and exhaustive index. We are sure that many of the more advanced workers in photography will gladly possess themselves of a copy of Mr. Wright's "Optical Projection."

**Photography as a Business.** By H. P. Robinson. (Bradford: Percy Lund and Co.)

This little book is a reprint of a series of articles which appeared in the columns of the *Practical Photographer*, from the pen of Mr. Robinson, who, from his practical experience, is well able to give valuable hints to professional photographers, for whose benefit the articles were written, and are now published in book form.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Brixton and Clapham.**—On Thursday, the 22nd inst., Dr. J. Reynolds, F.R.G.S., Vice-President of the Club, gave a most interesting lecture on "Iceland," illustrating the same with slides from photographs taken on a recent trip. Next meeting, February 5th, members' lantern night.

**Bury.**—At the ordinary meeting on the 21st inst., Mr. S. Litton, an active member of the Society, read a most interesting paper on "Cold Bath Platinotype." At the next meeting, February 18th, there will be a lantern exhibition of members' slides.

**Cardiff.**—At the ordinary meeting on the 23rd inst., Mr. C. P. Gooch in the chair, Mr. W. Purley gave a lecture on "Plain Paper Printing."

**Croydon Micro.**—The annual meeting of this Club was held on the 21st inst., when the President read his address, which reviewed the history of the Club for the past year. Mr. Lovett stated that there was a steady increase of members, the photography section alone numbering over sixty, and the whole Club over three hundred. Mr. E. B. Sturge was appointed Treasurer to the Club in the place of Mr. McKean, who has temporarily left Croydon, and Messrs. McKean and Gower (Hon. Secretary, Photographic Section) filled the two vacancies on the Committee. Nine new members were selected, and several fresh names were nominated.

**Glasgow.**—The annual general meeting of this Association was held on the 19th inst. Mr. John Morison, jun., took the chair on his election as President. The following office-bearers were elected for 1891:—Vice-President, Mr. Thomas Taylor; Treasurer, Mr. Hugh Reid; Secretaries, Messrs. William Goodwin and J. O. Oliver; and a Council of six members. Mr. Thomas Taylor then gave an interesting demonstration of "Platinotype Printing."

**Hackney.**—The American slides were shown before this Society on the 22nd inst. At the conclusion, slides by members were shown, Messrs. Barton, Gosling, and the Secretary contributing, to which were added some charming Woodbury slides of Niagara.

**Hastings and St. Leonards.**—The annual meeting was held on the 19th inst., when Mr. J. H. Mayor presided. All the officers were

re-elected, with the exception of Mr. Thomas, in place of whom Mr. Joshua Smith was added to the Council. Mr. H. Smith proceeded to give a demonstration on the Kodak.

**Holborn.**—On the 23rd inst. Mr. E. Clifton gave a demonstration on "Intensifying and Reducing."

**Ireland.**—A technical meeting was held on the 22nd inst., Mr. H. Bewly in the chair. Mr. H. M. Smith gave a demonstration and introduced the new No. 4 "Folding" Kodak.

**Isle of Thanet.**—At the meeting on the 21st inst., Mr. J. Howson, of the Britannia Works Company, demonstrated the methods of working to the greatest advantage the Ilford bromide paper, and the new "Special" lantern-slides. The beautiful collection of specimens brought by the demonstrator were much appreciated by those present.

**Lewisham.**—At the meeting held on the 23rd inst., Mr. Alfred H. Miles in the chair, Professor Lambert, M.A., gave a very able lecture upon the "Elementary Optical Laws Governing the Formation of Images by Lenses," which was listened to with great interest by a large audience. The lecture was made most interesting by numerous illustrations by the aid of the lantern.

**Luton.**—The annual meeting was held at the Coffee Tavern, Cheapside, on the 19th inst., when the accounts were passed, and the following gentlemen elected on the Council for the ensuing year:—President, Cyril Flower, Esq., M.P.; Vice-Presidents, the Mayor of Luton, Mr. A. Carruthers, Mr. F. E. Percival, and Mr. W. Wardill; Council, Messrs. A. V. Spratley, T. Dawson, W. Morrison, J. Davis, W. Roberts, G. W. Bindloss; Hon. Secretary, Mr. George Bunyan (19, Elizabeth Street).

**North London.**—The ordinary meeting was held on the 20th inst. This being a lantern night, a number of excellent slides by Messrs. Grover, Illingsworth, and the Secretary were passed through the lantern. February 3rd will be a technical evening, and on February 17th the lantern slide competition will take place.

**Phot. Soc. of Great Britain.**—Technical meeting, Tuesday, January 27th, 1891, H. Chapman Jones, F.I.C., F.C.S., member of Council, in the chair. The Chairman exhibited a Wray's detective lens of 6 in. focus, working at  $f/8$ , and covering a whole-plate. Mr. Addenbroke mentioned that he had a set of combination lenses, ranging from 4 to 24 in. focus, but they had not proved very successful. He thought that the use of aluminium would be of service in diminishing the weight of the cells. In answer to a question, he said it could be made for 8s. a pound, and that it could be easily soldered; it also turned well. Returning to the subject of combination lenses, Mr. W. England said he had used Darlot's lenses with satisfactory results. Mr. W. Bedford employed a Darlot, giving him a combination ranging from 7 in. focus to 29½ in. focus, and he found that it was possible to use the extreme combinations, although it was suggested that it was inadvisable to do so. Mr. D. E. Debenham suggested that if daguerreotype plates could be made more sensitive, they might prove very useful in scientific work. Mr. W. H. Harrison raised the question as to whether double or triple condensers were best for the optical lantern. Mr. T. E. Freshwater considered the latter form best for small and the former for large discs. Mr. W. E. Debenham said a great fault of the ordinary double condenser was its large amount of spherical aberration. A discussion then ensued as to the effect of the course of illumination upon the slide.

**Rossendale.**—The third lantern evening and concert of the above was held on the 21st inst. The lantern was efficiently worked by Mr. B. Compston, F.R.H.S., and much interest was taken by an appreciative and numerous audience in the pleasing variety of work and subjects contributed. During intervals songs were contributed.

**Spen Valley.**—The monthly meeting was held on the 20th inst., Dr. Farrow, President, in the chair. Mr. Mills, of Huddersfield, read a valuable paper on "Interior Photography," a branch of the art in which he has had great experience. An interesting discussion followed the reading of the paper.

**St. Bartholomew's Hospital Phot. Soc.**—The first meeting of the society this year was held in the anatomical theatre of the hospital on January 21st, Dr. W. J. Russell, F.R.S., in the chair. Mr. E. C. Bousfield gave a demonstration on the subject of "Photography." Mr. Bousfield showed his microscope and camera, and described the method he had adopted for deadening the vibration caused by vehicular traffic, etc. By means of the lime-light he then exhibited over forty slides, which were chiefly pathological, a few being zoological and physiological. Several bacteriological slides were thrown on the screen, and were much appreciated by the members. Mr. Bousfield expressed his thanks to Mr. Andrew Pringle for the use of some of his slides, and to Mr. C. H. Cosens for his lantern.

**Sydenham.**—The ordinary meeting was held at the Greyhound Hotel on the 20th inst., Mr. T. C. Cole in the chair. An interesting and instructive paper upon "Lenses" was read by Mr. P. Barlow, and a discussion followed. The next meeting will be held at the same place on February 3rd at 8 p.m.



**West London.**—At the meeting on the 23rd inst., the President (Mr. W. A. Brown) read a letter from Mr. John A. Hodges, Hon. Sec., resigning his position on account of ill-health. The President said all the members would agree with him in regretting the great loss which the Society would sustain through Mr. Hodges' resignation, but as they could not stand in the way, especially as Mr. Hodges was strictly ordered by his medical adviser to abstain from the work of Secretary, the Council had accepted his resignation. A resolution to this effect was therefore put and carried unanimously. The President then announced that the Council had appointed Mr. Harry Selby, of 42, Ladbroke Grove Road, W., to the vacant post of Hon. Sec., subject to confirmation by the members. The appointment was unanimously confirmed. The following appointments were then confirmed:—Mr. Leslie Selby to be Assistant Hon. Sec., vice Mr. Lionel C. Bennett, who resigns; Mr. L. Bennett and Mr. J. Stein to be Auditors, vice Messrs. H. and L. Selby, who vacate the posts on accepting the posts of Hon. Sec. and Assistant Hon. Sec. respectively. The President then presented the Society medals to the successful competitors at the recent exhibition. Mr. J. Martin Dickens then read his paper, "A Suggestion and a Photographic Yarn."

**West Surrey.**—At the annual general meeting, Mr. J. H. Smith, 107, Falcon Road, Clapham Junction, was appointed Hon. Secretary, in place of Mr. James, resigned.

**Wigan.**—The meeting on the 22nd inst. was a lantern evening.

## Quarterly Examinations in Photography.

**Question 4.**—Describe the methods for testing a lens for chromatic and spherical aberration, the aberration of form, the aberration of thickness, and the aberration of position of lenses?

**ANSWER.**—(1) For chromatic aberration a focimeter is used, but a clearly divided rule placed at some little distance leaning away from the camera will answer as well, so that the divisions may be read on the screen. For these tests substitute a sheet of plain glass for the ground-glass in camera, set up and level carefully. Focus for a division on or near centre of screen, notice number of divisions in focus with a given aperture. Take a photograph with same aperture, observe if there is any difference in definition of divisions on negative and screen; the chemical and visual foci do not coincide if this is the case. Great care must be taken that the dark-slide is in register. Should the defect non-coincidence of foci exist, this method will show the distance the focussing screen must be moved in order that it may coincide with the actinic focus.

(2) Tests for the aberration of form and thickness, and spherical aberration may be made by setting up camera as before, and parallel with a board on which has been pasted a piece of printed matter, or a flat sheet of card ruled in squares at such a distance that its image covers the focussing screen. The image is examined at full aperture and note made of diaphragm required to bring the whole in focus; compare results obtained from different lenses. The amount of spherical aberration may be further tested for by focussing for a

point near the edge of screen with a moderate stop, and a negative taken.

(3) For aberration of position, obtain the image of a watch-face on the focussing screen, and compare the fine strokes in figures (Roman) at right angles to one another, say XII. and IX., and note if they can be brought into focus simultaneously.—ELECTRA.

**Question 5.**—What is the meaning of the terms chemical and visual foci? Explain the principle of constructing an achromatic doublet from two uncorrected lenses, if this can be done?

**ANSWER.**—A convex lens is, as its name implies, thicker at the centre than at the edges; therefore the blue rays are bent more toward the axis than the yellow rays. The focus or intersection of the blue rays is therefore nearer to the lens than the intersection of the yellow rays.

The eye is most affected by the yellow rays, and their intersection is called the visual focus; but the photographic plate is most affected by the blue rays, and their intersection is called (wrongly) the chemical focus. Chemical focus is not correct, because all chemical actions do not have their maxima in the blue, although that of the impress of the latent image on bromide, chloride, or iodide of silver does.

Two uncorrected convex lenses cannot be combined to form a doublet that will throw an achromatic image on to a screen. They can be combined so as to form an achromatic eyepiece, owing to the fact that to the eye two or more rays that are parallel appear coincident. The different coloured rays from an object are rendered parallel by using two lenses, separated by a distance equal to half the sum of their foci.

An achromatic lens can, of course, be formed by a convex and a concave lens of different glass, and in the sense of being made of two lenses it might be called a doublet, but it is not usually so called in photography.—C.

**Question 6.**—What is a "flare" and a "ghost," and how are they caused?

**ANSWER.**—A flare is a circular patch of light seen on the ground glass of the focussing screen in line with the axis of the lens, and also making its appearance as a patch of fog in the centre of a negative. The opening of the diaphragm is reflected on the surface of the lens, and a distinct image formed of it, and when this image coincides with the focal length of the lens, a flare spot is caused, which is really an image of the diaphragm aperture. It is also largely caused by the edges of the diaphragm being worn bright, a defect to which Iris diaphragms are particularly liable. Ghosts are secondary images of bright objects appearing on a part of the plate on the opposite side of the axis of the lens to that upon which the principal image appears. They are caused by the reflection of any very bright part of the picture on the lens, thrown back again upon the plates. A flare spot can be partially overcome by slightly shifting the position of the stop when it is distributed over the whole of the plate, and consequently much less apparent.—WORFIELD

**Note.**—Answers have also been received from and marks awarded to A. C. S., Lindum, R. C. M., Sunesis, Developoid, T. K., and E. B. Six competitors who entered for the competition have not sent in any answers this week.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance,

the number and full title of the query referred to.

## QUERIES.

**4467. Toning Bromide Paper.**—Is this possible? Should be glad of any hints from those who have tried.—NELL READ.

**4468. Enlarging by Artificial Light.**—Would any brother amateur kindly tell me if it would be possible to enlarge on bromide paper with an ordinary paraffin lamp, as used in the sitting room, as we have no gas about here? I cannot stop the flare spot showing on the ground-glass, therefore conclude there must be a special lamp for enlarging purposes.—PROVINCIAL.

**4469. Hand Camera for a Lady.**—Can anyone recommend a really good hand-camera for a lady's use? Price not to exceed £5.—LADY AMATEUR.

**4470. Bromide Prints.**—I have printed this evening six prints on Fry's Argotype paper; some are covered with bubbles, and others have a dark metallic gloss over the surface. I exposed them for fifteen seconds to two gas burners in a chandelier, and developed according to ferrous oxalate formula. Will some one please tell me how these defects can be prevented? Otherwise the prints are good.—TE WIRIMU.

**4471. French Scientific and Optical Instruments.**—What would be the best French paper to advertise in for scientific and optical instruments? Who imports such into England?—ISTRIEL.

**4472. Paget Prize Plates.**—Will someone kindly

give me a formula for developing these plates with hydroquinone?—SYDENHAM.

**4473. Aristotype.**—When making up toning and fixing bath for the above, it goes a dirty brown. Must I mix in the order given? Will silver scraps from ordinary paper do, instead of Aristotype scraps?—J. J.

**4474. Spotting.**—Will anyone tell me how to spot my prints whether before or after burnishing? And what colour is used?—J. J.

**4475. Mounting Aristotype Paper.**—Having lately printed on the Aristo and albumen papers several camera bits with a nice polished surface, and which are backed up with cartridge paper, I will thank a brother to advise me as to the best mountant to apply to the edges of prints, since they need a strong adhesive, being backed up? Glue I find too risky to use, as it soon hardens, and it oozes out from under the mount.—T. K. FAIRLESS.

**4476. Making a Camera.**—I wish to make a half-plate camera, and should feel obliged if some reader would kindly furnish me with the necessary measurements, or refer to some book in which I could obtain them?—H. T. N.

**4477. Views on the Rhine.**—Can any brother amateur inform me where I can procure views of the Rhine district, either in London or Cologne?—KENDAL.

## QUERIES UNANSWERED.

Jan. 16th.—Nos. 4444, 4445, 4447, 4449, 4451, 4453, 4455, 4456, 4457, 4459.

Jan. 23rd.—4460, 4463, 4465.



## ANSWERS.

4462. **Shutter.**—I do not think you can get a reliable shutter at the price you mention. I would recommend you to buy the Thornton-Pickard time shutter, as I believe it is the best in the market at present. The price, of course, varies according to the size of the lens, running from 18s. 6d. to 47s. 6d. for times and instantaneous, and from 11s. 6d. to 40s. 6d. for instantaneous only.—HAMISH.

4463. **Loss of Tone. Matt Surface Prints.**—Provided the negative is one of sufficient intensity, purple tones that will remain can be got from a toning and fixing formula combined. From long experience I recommend Warnerke's formula:

Hypo	...	...	...	10 "z.
Water	...	...	...	10 "
B (stock solution).				
Chloride gold	...	...	...	15 gr.
Water	...	...	...	15 drms.

When A is dissolved, mix 1 drms. of B with 11 drms. water, and add to A, with constant stirring and slowly. The bath improves by keeping. Print well beyond the depth you require. You will find it fade at first in the bath and then recover. The toning and fixing go on together, the latter being complete in ten minutes; the time of toning is variable. Add more gold after toning one sheet of paper.—ISIS.

4464. **Lacquering.**—Laquer can be obtained at most chemists', or prepared as follows:

Seedlac	...	...	...	6 oz.
Well-ground copal	...	...	...	2 "
Dagon's blood	...	...	...	40 gr.
Extract red sandal wood	...	...	...	30 "
Saffron	...	...	...	36 "
Ground glass	...	...	...	4 oz.
Pure alcohol	...	...	...	40 "

Dissolve. Article must be perfectly clean and gently heated, a little hotter than back of hand can stand. Apply lacquer with camel-hair brush. If "Niké" wishes further information, will gladly answer anything further by post. My address with Editor.—DERWEN DABU.

4458. **Combination Rectigraph.**—I used one with a fair amount of success last season, and shall be happy to send "Amateur" prints taken with it and full particulars of same if he will write me direct. Editor has address.—ICONOCLAST II.

4461. **Roll-Holder.**—I can recommend "Quandary" to invest in a roll-holder, as I use one, and like it very much. Care should be taken to cut off just the right quantity of film before development. Though there is a registering apparatus to facilitate this, I do not find the films any more trouble to manipulate than glass negatives. For developing, I use a dish with a glass bottom and wooden sides, with slits of wood along the side to keep the film down.—X. Y. Z.

## EDITORIAL.

F. G. PATTERSON.—You are eligible to compete in any of our competitions. Glad to hear of your success at Edinburgh.

C. S. COBB.—Many thanks. Shall use the matter as soon as possible. Sorry to have bothered you about the medal.

S. FRANCIS CLARKE.—Your application for "Monthly Competitions" shall have attention. Really we think the photographic society having the loan of prints might support our enterprise to the extent of purchasing a copy of the *Photographic Reporter*. We note the advances made in photography at Louth in another column.

S. ROACH.—We know of no photographic society at Farnham.

A. W. GOTTLIEB.—Many thanks for your letter.

H. HOLT.—The fee is 2½ per cent. on the sale price, or a minimum fee of 2s. 6d.

FRANCIS W. HANNA.—We do not criticise the lantern slides. Shall be very pleased to have an account of photographic work in Madras.

ICONOCLAST II.—The matter must slide now, as we really cannot trace the questions. Use the alum bath.

W. WEBER.—The enlarging apparatus you name is in every way a serviceable instrument and will do all you require. We shall be very pleased to give opinion and advice upon any print you may send us. We are obliged for all your kind remarks with regard to the AMATEUR PHOTOGRAPHER.

D. M. HAMISH.—We have sent your letter to the manufacturers, as they are better able to advise you than we are.

E. DILLON.—The work must be entirely your own. Entry forms will be sent you.

A. M. WILSON.—Shall be glad to criticise prints. For such criticism no fee is charged.

J. M. HORTON.—Unfortunately omitted. We shall, therefore, be a week short this quarter. The answers will miss a week.

J. PAWSEY AND CO.—We note your letter, and the publishers will write you.

W. J. KIDD.—We have your paper, and will, if possible, publish same in the *Reporter*, but cannot promise to do so.

MISS F. T. STONE (Florence).—The contents of

your letter are noted. Our publishers have sent on account, and we will fill up entry form.

KENDAL.—Why not try the "Lantern Slide Exchange"?

C. O. VEVERS.—Duly received. Will notice.

CHAS. HALL.—We should think there would be no objection on.

MR. J. C. COLVILL.—Will report in due course.

W. FENTON JONES.—The address is published in the *Photographic Reporter*. What do you want us to do?

DOCKY.—Wire to hand. Of course it does.

DUN.—Leapers "Experimental Photography" (1s.), Harrison's "Photography for All" (1s.), and "Dictionary of Photography" (2s. 6d.), to be had from our publishers. By all means get a tripod camera. We should recommend half-plate size, and use carriers for quarter-plates to begin with; 1 oz. of pyro, 7 oz. of hypo, one packet of cut sensitized paper, printing frames, three dishes, a measure or two. We shall be glad to help you at any time.

B. DILLON (Algiers).—"Cristallos" contains ferrocyanide of potash, and the iron would combine and form Prussian blue. You should certainly keep one dish for iron, one for ferrous oxalate, one for pyro, and one for hypo.

BENYON.—We reply to your letter by post.

T. KIDD (Spain).—(1) We place as follows—E, B, and F. (2) A new ball is the only thing. Entry forms sent on. We will allow you some grace in the examination, as you are abroad.

F. J. QUICK.—Weak acid would be 1 to 100. We shall shortly have an article on the subject from the gentleman named.

ROBY.—You must not be disappointed at getting such results from your sixth negative. The plates are not sufficiently developed, and No. 2 is rather under-exposed; both prints are very badly trimmed and mounded. Let us see some more work in a month.

F. G., SHEFFIELD.—Prints returned this week. Let us know now what gold you use; if you carefully follow the instructions, we fail to see where you go wrong. Let us have half a dozen untuned prints with the directions, and we will try them and send you results.

LICHTBLID.—For films, C, for 4½ by 3½, is certainly the finest instrument in the market, and you will not be disappointed if you get it. Write the makers for detailed pamphlet. (D) There is no work at present in the market. Will not Leaper's articles now appearing in our columns assist you? If you can read German, as we suppose from your nom-de-plume, we can recommend you a good work in German, which our publishers can get for you, price 6s.

BLACK GRAY (France).—(1) A or L are the only two likely to suit you, but both require dark-slides; the number of plates is therefore limited. If for films, we should suggest L with a roll-holder. (2) We should choose No. 1.

KENDAL.—Give about the same exposure as you have already done, but commence development with about one-tenth the ordinary quantity of pyro, normal quantity of accelerator and restrainer; when all detail is out, add more pyro to obtain density.

HARRY HOLT.—No. 1. Good; would be improved by more detail where fogged. (2) Cut off an inch of foreground to improve it; very fair. (3) Wrongly developed, the blaze of light has lost you the detail and cut off as you suggest. (4) Good. (5) Good, but too much foreground. (6) Spoilt by the loss of monument base. (7) Good for a morning effect; if the clouds are put in, the result is very natural.

C. D.—No. 1 is worth price asked. No. 3. Yes with shutter fixed. No. 6. No, but much heavier than 1. We should use an R.R. of 8½ in. and a single lens of 13 or 14 in. focus.

W. H. GRAHAM.—The solutions are those used for intensifying negatives. The plate is soaked in No. 1 till white, then well washed, and placed in No. 2 till blackened.

G. N. TRAVERS.—The instrument named is quite as good as any at the price. We should advise you to see also the one at £3 3s.

PUZZLED.—The metallic reduction may be caused by the non-actinic paper, as you suggest, or by some emanation from the wood of the cabinet, or by gas fumes. Let us know what wood the cabinet is made of; in the meanwhile we will try the paper, and let you know result.

ISIS.—(1) We certainly plump for films under the circumstances. There would not be the slightest objection to placing a film between two lantern glasses and temporarily binding them together, which annihilates your objection. (2) We prefer a 6 in. lens—the one named we can highly recommend from personal experience. (3) We choose No. 9. Always at your service.

EXCELLENCE.—(1) Pin the cabinet against a wall in a good light, place the camera exactly opposite and parallel to it; front light should be used for copying as much as possible. (2) The print is from an over-exposed negative, fogged in development, we think, but we should prefer to see the negative before giving a decided opinion. (3) This depends so much upon the plate used and composition of developer that it is impossible to answer this query satisfactorily; the normal developer should be sufficient to bring about desired result. (4) If you put your

transparencies in the alum bath without washing well after developing, hydrate of aluminium would be precipitated as a slimy deposit on and in the film; if you do not wash the plate well between the alum and hypo bath, the latter would be decomposed and sulphur and oxide of aluminium be deposited.

BIRKENHEAD.—Have you tried the photographic dealers near you? It is quoted as a regular thing by many London photographic dealers. If you cannot get it in Liverpool let us know, and we will send you a card.

CESTRIA.—Please let us have two or three negatives up by post which clearly show the marks.

CLIFFORD D. FOTHERGILL (Biarritz).—The questions set were stiff, as you say, because we want competitors to read up reference works, etc., so as to answer correctly. It is no use asking questions everybody can answer, and which will convey no useful information. We shall expect to receive more answers from you, and you are not alone in your misery. No. 1 we place as follows:—1, 2, 3, 1. No. 2, we always give advice such as you require free, with the greatest of pleasure. Send as many as you like.

E. B. WAIN.—(1) Both are good instruments; we prefer 2. (2) The dark slides are good, and an improvement on some of the old forms.

F. PARTRIDGE.—Use the chrome alum clearing bath, on page 34 of "Dictionary"; when the negatives have been washed free from hypo, leave them in the bath for a minute or two, and then wash for half-an-hour.

ALPHA.—The lens is a French one by Gaudin, and is a good instrument, and well worth keeping. The print sent is a great deal too dark.

TYKO.—(1) The lens will take good landscapes, if stopped down to about f/24 or f/32; but is certainly not so suitable as No. 2. (2) They both work approximately at the same aperture. (3) We should certainly advise No. 2.

SINGAPORE.—We believe plates can be obtained there. Send us your name and address at once, and we will write you. If you enclosed your card it has been mislaid.

NOVICE.—Expose one plate for 20 seconds, and another for 90 seconds. Send them up to us, and we will develop them, and send you results. Be careful to mark the wrappers of plate, with exposure given.

W. F. HIGH.—(1) The appearance of the plate depends greatly upon what plate you are using, and method of development; generally the point is when the high lights are plainly visible on the back of the plate. With thinly-coated plates the whole image should be so visible. (2) We do not quite understand this query. What do you mean by "a perfectly clear sky"? If you leave the plate in the developer till it is quite black, the other part of the negative would grow much denser, and finally veil over, though this point may be delayed by the use of bromide. Write again, and explain yourself more fully, and we will answer you.

## Quarterly Examinations in Photography.

## QUESTIONS.

7. Give the equations representing the chemical changes which take place when making an emulsion from iodide and bromide of potassium and nitrate of silver. Which silver salt is precipitated first; and is the resultant salt a mixture or a compound?
8. State briefly the leading theory or theories of the action of light on a dry plate. [Limit, 350 words.]
9. It is required to obtain a negative of the interior of a church with a stained-glass window in the east end, but otherwise well lighted. What time of day and what light would you choose; what plates, and what method of development?

(Latest Day for Answers—February 9th.)

## RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
2. All answers must be preceded by the question, and should be written on one side of the paper only.
3. A *nom de plume* may be used, but in every case the full name and address must also be given.
4. Answers must not exceed 250 words, unless otherwise stated by the examiners.



5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed to:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Lantern Slide Exchange.

**NOTE.**—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

Several sets tables, scenery, etc., plain and coloured, to exchange for scripture and temperance sets.—List of R. W. Copeman, Kuklos Cottage, Henstridge, Somerset.

Dovedale.—Would like good slide of Lion's Face Rock in exchange for other Dovedale or Derbyshire view.—J. G. Patterson, Westwood, Eskbank, Midlothian.

William H. Pratt, 27, Regent Street, Nottingham, wishes to exchange slides of microscopical subjects for good slides of animal studies, or slides of Scotch or Irish scenery, on approval.

## Sale and Exchange.

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, from January, 1887, to present date, 1887 and 1888 lately bound in four vols.; also "Photographic Art Journals," from July, 1889, to December, 1890; have cost (including binding of first four vols.), nearly £3; all clean, and equal to new; no reasonable offer refused.—Thos. Burnell, Bradmore College, Chiswick, W.

AMATEUR PHOTOGRAPHER, four years, about 200 numbers, containing Wall's "Dictionary" from January, 1887; price 10s. 6d.; or will exchange. Also lot of sundries, cheap; stamp for list.—Address, Walker, Scotchholme, Nottingham.

**Cameras, etc.**—Camera (whole-plate, bellows-body) for sale, seven double slides, all good order.—Gordon, Cupar.

Lancaster's International 1890 quarter-plate, complete, with three slides, canvas case, perfect condition; 45s.; or exchange for good half-plate and slides only.—Landale, High Street, Kirkcaldy.

Stereo camera, brass-bound (by Hare), long extension, with six double backs, in leather case, in perfect order; cost £15.—Capt. de Crespigny, Werge's Photographic Stores, Berners Street, Oxford Street, where camera can be seen; price £5.

Lancaster's Extra-Special whole-plate camera, rack and screw adjustment, three double backs, in canvas case, £4 10s.; half-plate International, complete, two double backs, in canvas case, £3 10s.; 15 by 12 London-made modern camera, leather bellows, reversing and swing back, three double backs, £10 10s.; 12 by 10 ditto, £8 10s.—J. Biddle, 97, Medlock Street, Manchester.

Lancaster's quarter-plate Le Meritoire, one double back, stand, and three dishes; also tricycle, Crippen pattern, 30 in. wheels, bicycle steering, four ball bearing axle balls to cranks and pedals; price £9 10s.—356, King's Road, Chelsea.

**Cameras, Lenses, etc.**—For sale, whole-plate camera, with all movements, and three double slides, sliding tripod, Taylor's 9 by 7 R.R. lens, Ross' 8 by 5 R.S., Wray's whole-plate W.A. landscape, and Kershaw shutter to fit 9 by 7, all in good condition; what offers?—Address, W. Milburn, Brunswick Street, Carlisle.

Camera, half-plate (Chapman, Manchester), in fair condition, Darlot lens, two dark slides, and stand; 60s.—A. E. French, Ridsen, Hawkhurst.

Whole-plate long-extension camera, leather bellows, dark-slide, portrait lens (cost £6), dishes, chemicals, backgrounds; particulars; offers?—190, Heyside, Oldham.

Half plate camera, lens, slides, stand, and case; will exchange for field or opera glasses, and little cash.—Address, 24, Stratford Street, Birmingham.

Lancaster's 1890 half-plate Instantograph, with rapid rectilinear lens, tripod, slide, numerous sundries; lot 84s.; bargain; no cards, please.—Charles Howard, 55, Percival Street, London.

Good quarter-plate camera, reversing swing-back, rack adjustment, double extension, six double dark-slides, Optimus R.R. lens, waterproof case; £7 10s.—Burton, 53, Jasmine Grove, Anley.

Mayfield's 3½ by 3¼ camera, slides, lens; cost 90s.; will sell for 25s.—Sinclair, 139, Cannon Street, London.

Camera, stand, dark-slide, landscape and portrait lenses (by Marion), six dishes, negative box, two frames, all 5 by 4; price 45s.—No. 104, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.  
**Gas Bag**, 4 ft., two interchangeable jets, iron

retort, all good condition; 35s., or offers.—40, Coniger Road, Parsons' Green, S.W.

**Hand-Camera.**—Hand-camera (Samuel's), nearly new; cost 30s.; take 15s.—Fawcett, 3, Sunny Bank, Leeds, Yorkshire.

**Hand-Camera, etc.**—Quarter-plate hand-camera, with roll-holder, excellent rectilinear lens, f/8, rotating stops, shutter, focussing arrangement, finder, perfect; 50s.—No. 105, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Lanterns.**—Mahogany-bodied binocular lantern, 4½ in. condensers, patent dissolver, jets, and large selection slides, cheap, cash or exchange; full particulars.—Copeman, Henstridge.

Massive binocular, brass fronts, jets, dissolver, slides, new condition; cost £35; offers?—190, Heyside, Oldham.

**Lanterns, etc.**—Lectures, complete outfit, lime and oil-light lanterns, cylinders, regulator screen, and elevator, also about 300 best slides, consisting of life models, humour, and temperance.—Sale price and particulars of H. L., 35, Broad Street, Reading.

Optimus mahogany enlarging lantern, beautiful instrument, nearly new, 7 in. condenser, lens, lamp, carriers for quarter, 5 by 4, and half-plates, all complete; cost £3 13s.; sell immediately for £5.—Ellis, 7, Park Village West, N.W.

First-class binocular lantern, with all accessories, cylinders, etc.; cost over £40; sell for £24; full particulars.—Edward Dyson, Shambles Lane, Huddersfield.

**Lantern Slides.**—Lantern slides, about 200 coloured life models, effects, comies, etc.; great bargains to clear out.—W. North, 62, New Road, Aylesbury.

**Lantern Transparencies.**—Plain lantern transparencies (good), "Mr. and Mrs. Gladstone," "Boy Reading Tit Bits," and "The Great Healer," sent post free to any address for 1s. 9d.—Marshall, Sutton via Keighley, Yorks.

**Lenses.**—Best quality 5 by 4 rectilinear, also wide-angle, perfect; 20s. each.—T. Hall, Pinfold Lane, Lancaster.

Morley's whole-plate view lens, 6s.; 5 by 4 wide-angle rectilinear, 20s.—Bennett, 43, Mitchell Street, E.C.

Dallmeyer's wide-angle rectilinear lens, 1½ by 6½, revolving stops, good condition, 80s.—No. 104, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, E.C.  
5 by 4 Euryscope, f/6 lens, Waterhouse stops, bargain, 18s.—R. Henry, 2, Hawthorn Villas, Blad Road, Stroud, Glos.

For sale, Dallmeyer's 18 by 16 R.R., £13; ditto 10 by 8, £6 10s.; Ross P.S. No. 7, 90s., No. 4, 55s.; Ross R.S. half-plate, 70s.—Photo, 84, Park Street, Bristol.

**Lenses, etc.**—Half-plate Optimus wide-angle, new, perfect condition, 40s.; whole-plate French rectilinear, Iris stops (by Taylor, Leicester), a splendid instrument, 70s.; whole-plate Kershaw shutter, new, perfect condition, 15s.—Cooper, Chestergate, Stockport.

Levi's portrait lens, 15s.; lantern objective, 10s.; Lerebours and Secretan's quarter-plate portrait lens, 20s.; quarter-plate portrait lens, 15s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

Good half-plate view lens, case of stops, 8s.; carte roller press, 4s.—Parsons, 12, Albert Cottages, Crawley.

Whole-plate R.R., 12½ focus, movable hood, 30s.; Marion's 25s. tripod, 7s. 6d.—W. Field, 253, Canberwell Road, London.

Lancaster's whole-plate Instantograph lens and shutter, as new; 30s.—Isaac Wolfe, Newmarket, co. Cork.

**Outfits.**—Complete outfit, half-plate Empress camera, three double slides, Beck's set of Oasket lenses, 5, 7, and 9 in. focus, interchangeable Iris diaphragm, in snap case, Thornton-Pickard time and Instanto shutter, focussing cloth, all fitting in neat leather case, Ashford's tripod, Optimus travelling lamp; what offers? Giving up photography, but shall not sacrifice. No offer less than £20 considered. Everything high-class.—A. George, The Hollies, Manor Park, Streatham, S.W.

**Platinum**, five-sixths of an ounce, avoirdupois; offers?—40, Coniger Road, Parsons' Green, S.W.

**Sets**—Underwood's 1890 half-plate Instanto set complete, as new, bargain, 67s. 6d.—H. Rowe, Wallbridge, Stroud.

Complete half-plate outfit for sale, long-focus camera, rapid rectilinear lens, three double back backs, three-fold tripod, and all sundries, only new last year, not used twelve times; cost £14; sell for £11, or what offer? approval.—Page, The Firs, Dersham.

Underwood's quarter Tourgraph set and shutter; exchange with cash for hand-camera (Talmer preferred) or offers in cash; approval.—Fucker, Gloucester Road, Teddington.

Quarter-plate set, about 25s. Particulars and price.—West, Peacock Street, Middlesbrough.

Instantograph, Lancaster's, camera, half-plate 1890 revering camera, all latest improvements; rapid rectilinear lens, Waterhouse stops and movable hood, double slide, quarter carrier, folding stand, printing frames, measures ruby lamp, dishes, etc., 80s.; lowest, approval.—Lawrence, 9, Sussex Terrace, Markfield Road, Page Green, N.

**Stereoscope.**—Capital revolving double stereoscope, mahogany, square, good condition, price 21s.; also small hand ditto, 3s. 6d.; quantity of slides, 7s. 6d.; approval, deposit.—W. North, 62, New Road, Aylesbury.

**Sundries.**—Handsome brass-rail fender, full size, suit dining or drawing room, nearly new; cost 35s.; will sacrifice for 18s. 6d.—A. Henry, 4, West Brixton, S.W.

Will's oil, or exchange for good enlarging apparatus, heavy burnisher, 14 in. roller, high-class conjuring apparatus, secrets of good tricks, and optical illusions, etc.; also for sale or exchange, "The Performing Harlequin," in perfect condition, as sold by Bland for £22.—Address, Prof. Weber, Illusionist and Ventriloquist, Waterloo, Liverpool.

Safety bicycle, cushion tyre, diamond frame, Premier type, ball bearings to all parts, including pedals, adjustable to any rider, in splendid condition everywhere; cost £14; price £7 10s.—H. Baker, Warwick House, Acre Lane, Brixton, S.W.

## WANTED.

"Amateur Photographer," numbers for January and February, 1889.—Oxle, 4, Strathearn Place, Edinburgh.

**Burnisher.**—A small burnisher. Apply to S. Kirkham, Court Place, Carlisle.

**Camera.**—Quarter-plate camera.—Richardson, jun., Suffolk Street, Forest Gate.

**Cameras, etc.**—Studio camera, whole-plate, and stand, also studio accessories, cheap.—O. Boardman, Southcote Road, Bournemouth.

Watson's Acme camera, 7½ by 5, complete with turntable and tripod.—No. 93, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

5 by 4 camera with reversing frame central swing-back, three slides; lowest price.—Gibbs, Manchester House, Bedford Street, Bristol.

**Cameras, Lenses, etc.**—Half-plate Tourist camera, three backs, R.R. lens, and tripod, in good condition, by good maker, at reasonable price.—Particulars to Dr. Shelly, Hertford.

**Hand-Cameras.**—Diamond, or other quarter-plate, hand-camera, in good order, cheap.—Athos, Fern Bank, Sherland Road, Twickenham, Middlesex.

**Hand-Cameras, etc.**—Facile hand-camera, quarter-plate must be in good condition and cheap, with finder, and all complete; approval of Editor; deposit.—No. 103, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Lantern.**—First quality Lancaster enlarging lantern, 6 in. condensers, or Hughes' bijou half-plate ditto.—M. Bett, Hazel Bank, Sydenham Hill.

"Lampadiorama" (French optical lantern), "Polyopticon," and other opaque lanterns.—R. Owen, Friar's Stile Lodge, Richmond Hill, S.W.

**Lantern Slides.**—To purchase second-hand lantern slides, also coloured slides of stones, etc. Good binocular and 12 by 10 R.R.—W. V. Morris, 34, Parade, Cork.

**Lenses.**—Optimus rapid portrait lens, 5½ in. focus; exchange Kistman roll-holder, half-plate, loaded with transparent film, Newman's pneumatic shutter, or Houghton's changing tent.—Pratt, 27, Regent Street, Nottingham.

Ross' triplet lens, must be in good condition and moderate price.—Wratiaslaw, Braunston, Rugby.

**Outfit.**—Half-plate outfit, rapid, in exchange for splendid St. Bernard dog, female, highest champion pedigree, registered, a prize winner, very affectionate, and well-mannered.—Simpson, Middlesfield, Edinburgh.

**Photographic Views.**—Advertiser desires to purchase attractive whole-plate views of home scenery. Amateurs should send copies, and quote for sale of negatives, also for copies per dozen.—Write with fullest details to F. J. S., care of Eagles and Co., 1, Pilpot Lane, E.C.

**GENUINE** Photo Business for sale, Midland Town, 12,000 inhabitants, practically no opposition, established 3½ years, business increasing rapidly, good opportunity for young man commencing.—No. 106, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, E.C.

## Quarterly.

## Price 5s.

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Offices: 1, Gress Lane, Ludgate Hill, London, E.C.

VOL. XIII. No. 331.]

FRIDAY, FEBRUARY 6, 1891.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

ON Monday last several hours were spent in our offices by Messrs. Valentine Blanchard, Philip H. Newman, and A. M. Rossi, judging the photographs contributed to the AMATEUR PHOTOGRAPHER "Holidays with the Camera." The contributions were very critically examined, with the result that in several classes no awards were made. In Class I., "Niepce" or *Progressive Gold Medal*, the award was made in favour of—

JOHN E. AUSTIN . . . . Maidstone

whose contribution "On the Yorkshire Coast" most thoroughly deserves this the highest award that has ever been made in connection with the AMATEUR PHOTOGRAPHER competitions.

In Class II., "Niepce" or *Progressive Silver Medal*, there were no entries. In Class III., "Niepce" or *Progressive Bronze Medal*, there were only two entries, the Medal being awarded to—

JOHN C. LIVINGSTON . . . . Edinburgh

for a very capital series, "Whitby and its Surroundings"

In the remaining three classes two Gold and Silver Medals were offered for competition. The judges did not consider the photographs contributed for either Medals of sufficient merit to permit of their making an award, but in the Bronze Medal class, prizes were awarded to—

CHARLES EMANUEL . . . . Hyde Park

W. H. WHITTARD . . . . Streatham Hill

for very fair work. The judging in this class was one of considerable difficulty, as there were no less than twenty competitors.

It will be remembered that in the "Holidays with the Camera" competition, each competitor had to elect which class he would enter; it is therefore quite possible that work entered for the Gold Medal might have secured a prize had it been entered for a Silver Medal. We also point out the considerable unevenness of photographs contributed, both in artistic value and technical excellence. In several instances two, or perhaps even four, very passable prints would be found in a competitor's work, the rest being of a mediocre character, or with most glaring faults in technique. The adoption of several printing processes militates

very much against success. Altogether we cannot express ourselves as satisfied with the work that has been contributed to this competition. Much time and patient labour have doubtless been spent upon some of the work, and we shall be able to select for our book "Holidays with the Camera," many charming pictures, and much that is interesting from the letterpress that accompanies each contribution; still, we could have wished that the standard of photography would have permitted the judges to have awarded all the medals placed at their disposal.

To future competitors we commend the following suggestions:—Use one make of plates, one developer, one printing process; only send prints from your best negatives. Be careful that in printing in clouds they conform to the lighting of your picture. Mount your prints upon plain mounts, avoiding tinted mounts, and, above all, to see that every picture is taken from the best point of view.

WE have before us the report of the Council of the Photographic Society of Great Britain, in which are mentioned several matters of interest, a list of the papers read, and an analysis of the last Exhibition held. It is interesting to note that at the 1890 Exhibition there were 163 exhibitors—82 members and 81 non-members. There were six foreign exhibitors (America, 2; France, 1; Germany, 2; India, 1). Of the 163 exhibitors, 83 were professionals, and 80 amateurs. In all, 658 frames were hung, containing 808 photographs. We note that the progress medal given by the Society has been awarded to Lieut.-Col. J. Waterhouse, B.Sc. The new home of the Society at 50, Great Russell Street, is now completed, and a reading-room and dark-room are already available for the use of members.

THE annual dinner of the Photographic Society in conjunction with the Solar Club will be given at the Café Royal, on the 9th instant. Professor Glaisher will take the chair. Ladies will be present. The tickets can be obtained of Mr. W. England, 7, St. James's Square, Notting Hill, or of the Secretary of the Photographic Society.

AN old subscriber writes: "I must congratulate you upon the happy thought of giving questions to be answered in your columns. This is calculated to encourage the reading up of the subject much more than anything I know of, and will do much, I am sure, to remove the reproach of the



little *original* work there is now, in comparison to the immense number who practise photography." The questions set by the examiners are so framed as to be educational, and our "Quarterly Examinations in Photography" are not a mere hotch-potch of questions under the guise of a "question-box," ranging from, "Why do I see the picture upside down on the focussing screen?" to "Give a free translation of the following:

Pentachloronaphthalene, isomeride phthalide,  
Dinaphthyle, phenylbutylene, monochloronaphthalenetetrachloride."

We have taken the precaution to bar writers upon photographic matters, lecturers, or scientists from entering our "Quarterly Examinations." They are meant for students, and not for teachers. We trust as they become known many more of our readers will enter their names and send in answers. The marks will be published at the end of each quarter, and three prizes awarded.



In another column we publish a very interesting letter from Mr. Alfd. Cornish, of Melbourne, giving the result of his experiments with regard to the "actinic power of light in the tropics." The table which he gives will be of much service to many who may practise photography in the tropics.



THERE are rumours afloat that one of the outcomes of the recent photographic exhibitions held in Edinburgh will be the formation of a Scottish Camera Club, restricted to amateur photographers. We have already expressed strong opinions upon the necessity for an amateur society or club in Edinburgh, and feel assured, from the very hearty reception that we received at the "at home" given by us last November, that there are many of our subscribers who would support the Scottish Camera Club if formed. We shall be pleased to publish any letters upon the subject.



"AN Amateur Photographer" has sent us a reply to the letter from Herr C. Srna, President of the Vienna Amateur Club, and although we have no wish to take up sides, it does appear to us to be most unreasonable to have a jury of selection, and no declaration that the whole of the work in connection with the production of the photograph has been done by the sender—"exposure, development, retouching, printing, toning, and mounting." Without such a declaration no jury could accept the work. It may not be known to Herr Srna that such is the uniform custom at all exhibitions and competitions here, or at least the rules provide that the whole of the work must be done by the exhibitor. Our own form of declaration is well known, and here it is:—

"I, \_\_\_\_\_, of \_\_\_\_\_, hereby declare that I am an amateur photographer, that the photographs sent by me are my own unaided handiwork, the selection of subject, exposure, development, retouching (if any), printing, toning, and all other operations having been performed by me."

Many hundreds of amateur photographers in all parts of the world have subscribed their names to this declaration, and we have never found that Herr Srna's opinion that they "considered a passage requiring an express declaration as to how much of the work the exhibitor himself has done to be a degradation, nay, well nigh an insult, for amateur and professional alike." We have all through the piece been hopeful that the Vienna Exhibition would be a model one, and one from which the promoters of exhibitions here might learn something; but if the jury of artists are going to accept photographs from Austrian amateur photographers without question as to how or by whom they were produced, then we heartily hope that our voice of warning will result

in English amateurs withholding photographs which are entirely their own work, and should therefore not be placed in competition with work exhibited by those who have only uncapped the lens or, possibly, developed the negative. As to professional work, it is no concern of ours. So long as a professional photographer employs an operator to take the picture, another assistant to develop the plate, another to retouch, another to print and tone, and yet another to mount and frame, so long, we consider, he should not be allowed to compete with the amateur photographer; although it is a remarkable thing that in the case of the exhibitions of the Photographic Society of Great Britain, the amateur generally holds his own against the professional, notwithstanding the army of workers the latter employs in producing his exhibits. When, as in the case of the competitors for the *Photographic Reporter* medals (restricted to professional photographers), he signs a declaration framed almost identically with that quoted above, then he may hang his pictures side by side with those of the amateur, and they can be judged on equal grounds.

It appears to us that the Vienna Club have been thoughtless in regard to the rules governing their exhibition, and have not really considered how easily, without properly drawn up rules, exhibitors could evade that which we in all honesty believe the Committee intended to be a condition, *i.e.*, that the photograph should be the work of the sender.



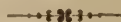
THE Manchester Amateur Photographic Society have, through their members, says their organ, the *Photographic Record*, within the last six or seven weeks gained eight medals in recent competitions, and of these five are for work contributed to the AMATEUR PHOTOGRAPHER competitions:—

Lantern Slides :	J. W. Wade	..	Gold Medal.
	Dr. Jumeaux	..	Gold Medal.
	W. H. Shirley	..	Silver Medal.
Stereoscopic Slides :	Dr. Hamilton	..	Gold Medal.
Enlargements :	T. Shaw	..	Silver Medal.

If these awards give pleasure to the society as a body, the members may rest assured that we are highly gratified to find that our competitions are so well supported and our medals so valued by the members of one of the largest and most influential photographic societies in the kingdom. We have been asked by the society to visit Manchester in March, and shall have the pleasure of showing the 1890 Prize Lantern Slides on the evening of Tuesday, the 10th prox., and shall also show them, by invitation of the Committee, at the Liverpool Photographic Exhibition on the evening of Wednesday, the 11th prox. We look forward with much pleasure to both these evenings, as they will afford us an opportunity of making the acquaintance of many who do not as yet know us in the flesh.



MAJOR J. F. NOTT will deliver a lecture on "Wild Animals in Captivity," illustrated by the optical lantern, on Monday, the 16th inst, in the Lecture Hall, Hill Street, Richmond. The Secretary of the Richmond Society, Mr. E. G. Richardson, 20, Hermitage Road, Richmond, will be glad to forward tickets, price one shilling each. The proceeds, we understand, will be given to the Richmond Hospital.



THE 1890 "Prize Slides" have been shown at several places lately, and they appear to give the most general satisfaction. The Secretary of one society writes: "We have to thank you for the pleasure afforded us viewing so grand a set of slides; the best we have had the



pleasure of seeing." We are sure that the pleasure afforded to hundreds of people by the exhibition of the AMATEUR PHOTOGRAPHER Lantern Slides must be as gratifying to prize winners as to ourselves. We are only the middlemen, but they are the producers. We hope this year's competition, whilst losing nothing in interest for the competitor, may have more interest for the lay public, and we shall hope by the end of the month to have rules and conditions ready.

THE contents of this month's *Photographic Reporter* are published in another column. We have heard it said that this month the frontispiece alone is worth the money. Our advice is, buy it, and then write and tell us what you think about it. Our publishers have made arrangements that the *Reporter* shall be on sale at all the principal bookstalls of Messrs. W. H. Smith and Sons. If any of our readers find any difficulty in securing copies either at the bookstalls or photographic dealers', will they please communicate with the publishers?

THE President of the Croydon Microscopical and Natural History Club, Mr. Lovett, has, we understand, "at his own expense and trouble, presented a dark-room and laboratory to the photographic section of the club for the coming year. The room is some 25 feet long, and has every convenience, including a permanent screen, etc., etc." We are glad to find that Croydon is able to support two societies. The Croydon Camera Club has certainly set the older society a good example.

WE have just received the full prospectus of the Crystal Palace National Photographic Exhibition, April 13th to May 2nd inclusive. Last year the attendance exceeded 41,000 a week. The alcoves are this year to be placed in the nave, where the screens will also be arranged. A gold medal is to be given for the best alcove, and a silver medal for the best complete screen. We are glad to note that the classes for amateurs and professionals will be kept separate and distinct. This must be, unless the work is entered under identical conditions. A special class is to be devoted to the work of lady amateurs, and a silver medal will be awarded for the best picture.

We are pleased to note that the "grand challenge cup" for the best collective exhibit by a photographic club or association will be again competed for. We consider that societies should support this competition, and we hope to see a very fine show of photographs entered by societies. There should be at least fifty societies who could send a collective exhibit. "The number of pictures shall not be less than fifty or more than one hundred, of which a maximum of one-fourth shall be the work of professionals"—provided always, we suppose, that the society admits professionals as members? A Champion Class Competition will be inaugurated for the first time. The rules provide that "two gold medals will be awarded, one for portraits or groups and one for any subject not being a portrait or group, which at any time during 1889, 1890, or 1891, at any public exhibition in the United Kingdom, shall have been medalled either singly or in sets. Entire sets must be sent in, and all particulars of previous awards must be stated on pictures or frames." Applications for entry forms should be sent to the Crystal Palace Company, Sydenham, S.E., or we shall be pleased to forward copies to any of our subscribers.

WE heartily congratulate the Croydon Camera Club upon the marvellous progress it has made. We cannot remember any other provincial society which, in less than twelve

months from its foundation, has had as many as seventy members elected. Such, according to the first annual report, is the case. We also note that there is a substantial balance of assets over liabilities, and a valuable addition to the executive secured by the election of Dr. H. J. Strong, J.P., as Vice-President.

PORTOBELLO wants a photographic society—so writes Mr. W. W. Ritchie, of 10, Wellington Street, in that town. Perhaps some of our subscribers will help him to form one?

MENTION was made last week, in the article "Round the World with a Camera," of negatives being broken. Our attention is called to the matter by a correspondent, who says, "Why do not the manufacturers of these boxes make the grooves of india-rubber with a flat piece at the bottom?" We suppose the chief reason is that the public will not pay for them. We should advise anyone going abroad to have special boxes made on the model of the very excellent slide-boxes made by Messrs. W. Watson and Sons, High Holborn, in which the slides rest upon two india-rubber tubes at the bottom, and have india-rubber at the top which presses upon the top of the slide; the boxes are not grooved, but they travel safely any distance. In designing the box for the 1890 Prize Lantern Slides, which Messrs. Watson made for us, we have india-rubber at the bottom and thick felt on the top, which keep the slides perfectly steady. We have no doubt that the firm would make negative boxes on the same lines as either of those mentioned.

WITH regard to a paragraph that we published having reference to copyright in Father Damien's portrait, our attention is drawn to the matter in a letter, in which our correspondent says that "the author of the original sketch, I believe, took no proceedings, but the photographer who reproduced his sketch, and had registered the photograph did. . . . The photographers, the owners of the copyright in the photograph, did threaten some proceedings, and I believe did obtain some small damages, but in one case which came under my notice the proprietors of a newspaper that reproduced a photograph of Father Damien repudiated the alleged infringement of copyright and defeated the plaintiff with costs." We are sure some of our readers will be interested in the above, and we have to thank our correspondent for putting us right in the matter.

**Photography in France is Forbidden to "Strangers."**—If an artist is observed in the act, the nearest "gendarme" or "gardien de la paix," has a right to remove him to the police station, where probably his goods will be confiscated and himself greatly inconvenienced, before he once more emerges, a wiser but a lighter man. To avoid this, the little trouble of obtaining leave had better be gone through. If you cannot present yourself at head-quarters, then obtain and send a passport to the Chef du Génie of the nearest fortified town to where you intend practising the art, asking for leave to photograph, etc., and enclose a reply stamp to ensure notice being taken of it. This will probably produce a formal letter authorising you to photograph for a specified time (which it is better to name yourself in the first letter) in the district under that fortified town. But this is not all. The General Commandant has to put his stamp, and so send this reply to M. le Général Commandant of the same town as above; he will stamp it, and leave is then complete. To think that an English Consul can obtain leave for you is an error. He cannot now. It was so once. The best mode is to present yourself, if possible, to the officers named, with either a passport or a Consul's letter of introduction. The French officers are most polite, and very ready to do you this service, if you will look upon it as a favour from them to you. "Continental" Bradshaw gives you the names of all Consuls and Vice-Consuls in Europe. Postage to France is 2½d. ½ oz. In France 15 c. 15 grms. A passport once obtained is useful for life, and often obtains admission to Continental buildings at hours when they are closed to the public or never open at all.



## THE ART GALLERIES AND THEIR TEACHINGS.

We have in several articles dwelt upon the value of the study of the best works of our landscape and figure artists as an aid to the photographer in producing results which in their own particular line shall be worthy of the name of pictures. We desire now, in some sort, to sum up the teaching which we have endeavoured to inculcate, and this as shortly as possible, laying stress on but two or three points of primary importance.

At the outset, then, we would say that the choice of worthy subjects is the first step towards attaining any true and consistent excellence in the direction of artistic photography. We plead for greater thought and greater care in the selection of objects or scenes to be photographed. We can see, indeed, but slight chance of distinction for that class of worker who with proud glee announces that he has exposed all his dozen plates or worked through a spool of film, and that "they have all come out nicely," meaning thereby that all his negatives have turned out clear and sharp; this from a purely photographic point of view may be eminently satisfactory, yet from an artistic standpoint those twelve plates may be as valueless as if they were all hopelessly fogged. There is an end beyond that of purely scientific success, and that end is to create, so far as the means at our disposal permit, a photograph which upon the eye of the spectator shall produce the same sensation as the scene itself presented to us when Nature herself spread it before our gaze. We maintain, then, that the want of cultivation of the faculty of selection is in the first instance the cause of the failure of so many photographs from an artistic point of view. Moreover, there are two distinct ways in which this faculty of selection must be judiciously exercised—attention must be paid in the first instance to the actual material objects to be included in the picture and to their arrangement; and secondly, a careful study must be made of the lighting best suited to those objects when selected. Success in both these stages of picture-making depends, not on the apparatus, which can afford no help, but entirely upon the individual taste and the æsthetic faculty possessed by the photographer. That in itself is an answer to those who would dub photography a merely mechanical contrivance, since if that element of artistic individuality once enters into the composition of a photograph, then it becomes something more than a mere "topographical representation."

This faculty of selection, how is it to be obtained? It may be said that if it exists it is innate—it cannot be acquired. That, we think, is only true up to the point that it must be conceded that, like every other faculty, it is very much a creature of circumstances, and where circumstances have not called it into play it may yet exist, though dormant. And here is another good reason for encouraging the study of artistic photography as a means surely of developing the dormant æsthetic faculty, by pointing out to its votaries the comparative insufficiency of photography, merely scientifically considered, to satisfy the higher instincts, and to press home the truth that it is the more spiritual or artistic side that should be assiduously cultivated as a powerful ameliorating influence upon the world at large.

If, then, this faculty is able to be acquired, how are those in whom it is dormant to cultivate it? Firstly by the study of Nature herself in her own haunts as she discloses herself in ever-varying forms of beauty to the eyes of her admirers. Here the student will learn the broad facts of nature, the effects of cloud and sunshine, of rain and storm. In her presence he should never let slip the opportunity of exercising his artistic faculty, and of forming his taste; the mental note-book of artistic appreciation should be ever open in his hand. Secondly, he must go to the great masters

of painting, and study their methods of arrangement and composition, try to appreciate their powers of selection, the motives of their work, and, above all, the subtle instinct by means of which that same sentiment which nature herself presents to them is brought home in their pictures to the eye and the mind of others. Therein lies the faculty of true greatness of style, because truth to nature, coupled with the faculty of artistic selection, results in the habitual choice of such subjects as appeal to the best sentiments of man's nature, and involve the widest interests, as opposed to such as are confined and petty in the lesson they would emphasize. True, in landscape the more closely nature is followed the more nearly will the artist succeed in telling nature's own story, but in the region of genre or figure study it is specially desirable that those who aim at real artistic excellence should appreciate what is true greatness of style. We have noticed in many genre studies, not a few of which have been awarded medals at our too frequent photographic exhibitions, that the motive is common-place, ridiculous, grotesque, or appealing to some interest purely personal—clever in its way, no doubt, but utterly wanting in any of the higher qualities that should be the aim of the true artist. The representation of Nature as degraded by empty frivolities, or soiled by sordid vices, is not interpreting nature as Nature's Creator would have us interpret her; namely, as a step to raise us nearer to the sublime. In the Creator's Nature there is nothing frivolous, nothing sordid, nothing vicious, except what is the outcome, or rather the excrescence, of man's sin, and so it comes about that those who dub themselves naturalists are often most incorrectly so called, since they have failed to distinguish, amongst the mass of material put before them, the true Nature of the Creator, from the false and debased Nature of the creature, and in the selection of their subjects appeal to the lower rather than to the higher passions of the spectator. In pure landscape this danger, of wrong selection, and of want of nobility in the choice of subjects, is not so great, but another danger awaits those painters and photographers who fail to study the truth with care—the danger of untruthfulness in the conception and rendering of space; and here we approach the question which has lately excited so much correspondence in the photographic journals as to the relative value of sharpness or of blurring in the focus of the distance. If for the selection of subjects and for breadth and nobility of style the photographer artist is to go to Nature first, and then to her best interpreters amongst the painters, where is he to find a method which will enable him to reproduce in his pictures the subtle, all-pervading sense of atmosphere which gives the idea of space to a truly artistic work? The painter attains this object by means of the powers he wields in palette and brush, by means of opposition of tones and so forth. This the photographer, in his study of the question, must not overlook; but it will hardly help him much. There is, however, another method—and a truer one—for obtaining the same result, which we cannot but notice in the works of our great landscape artists—Turner, for instance (and of our moderns, especially D. Murray). As Ruskin has said, "The idea of space is more clearly indicated by the *drawing* of objects, the degree in which their details and parts are distinct or confused, than by the relative tones of the objects."\*

What, then, is the sort of drawing that we require? To answer this we must go again to the great landscape painters. We photographers are told by one school of enthusiasts that we should have all the planes in our pictures sharp, and by another school of still greater enthusiasts that every object but the principal one should

\* "Modern Painters," part ii., sec. ii., chap. v.



be intentionally put out of focus. During the time that the controversy has continually raged on this subject since the issue of a work called—wrongly, as we think—"Naturalistic Photography," we have always held our own opinion. It is perfectly true that "objects at unequal distances cannot be seen (distinctly) together, not from the intervention of air or mist, but from the impossibility of the rays proceeding from both converging to the same focus, so that the whole impression either of one or of the other must necessarily be confused, indistinct, and inadequate." Further, it must be remembered that the space which the photographer is going to occupy with his picture is infinitely smaller than that occupied by nature; therefore, it would be absurd to collect in that small space all the lines and patterns which are occupying nature's canvas. Yet there should be some definite indication of those lines—there must be no vacancy, no blank spaces; for "in art every space or touch in which we can see everything, and in which we can see nothing, is false." Let us remember that our pictures should "never be without that finish and fulness which no distance can render invisible and no nearness comprehensible." How, then, are we photographers to reconcile the apparent contradiction between indistinctness of lines without vacancy on the one hand, and confusion of undecided lines, which by no means annihilates detail, but rather serves truthfully to suggest it, on the other?

The first help that we shall find is in the judicious choice of the time of day in which to operate, as a French writer\* on this subject has pointed out: "It is evident that in the evening as in the morning the planes of nature, whatever may be their respective distances, accentuate themselves. If you attempt to render the sensation of air and of ambient sunshine in the middle of the day, you will get nothing better than a flat, meaningless result." We have, then, two practical hints to go upon—we must watch for the particular time of day, that special phase of lighting which, when reproduced by photographic means, will convey with it a truthful notion of the different planes of nature and the idea of space, whilst at the same time we must endeavour, by such means as are in our power, to modify the sharp drawing which our lenses as good optical instruments produce.

This latter, then, is the really difficult end to attain, and it has never seemed to us that it is to be obtained by putting either foreground or distance out of focus, according to whether we wish to draw attention to one or the other. If we compare the effect produced in the contrasting of foreground and distance in one of the pictures of Turner, or of East, Murray, Vicat Cole, or Leader, with a so-called naturalistic photograph in which the distance is intentionally put out of focus, we see that in the former it is not so much the indistinct definition of the lines themselves that produces the desired effect, but the breaking up of those lines—the incompleteness in the combination of the lines which make up the distance. It does not seem, then, that we photographers have any means in our power of so breaking up the lines in our negatives; it is beyond the power of our instruments, which can only enable us to obtain blurred or foggy editions of the lines, which still remain complete in their combination.

What then have we to fall back upon in order to obtain truly artistic distances? We have not the painter's powerful adjuncts in palette, in brush, and in skilful touch to produce those softening tones which seem to convey to the eye the identity of intervening atmosphere; but such tones as by various positive processes we are able to obtain, these we

should be ever ready to make use of, selecting that particular style of printing best suited to the subject. Then we must exercise skilful judgment as to the time of day, and the most effective scheme of lighting which nature provides for us, so as to watch for that time when the distances between the varying planes are most emphasized, thereby avoiding as far as possible the too great sharpening and levelling up which our lenses give us. And again, if we cannot truly break up the lines of our distance in our negatives, by careful printing it has often seemed to us that our best artist-photographers have approached a point in the skilfulness of rendering the varying distances with varying indefiniteness, which comes very near in effect to the result produced by painters in the breaking up of their lines.

What we plead for then is greater consistent care in the selection and choice of subjects and in the time of lighting, and more especially in the appropriate style and manner of the printing, so that we may hope, as a body, to rise to a higher level of artistic excellence, and refute the recently expressed opinion of an imperfectly informed leader-writer in the *Standard* who wrote about "all photographs being momentary reflexions of the mood which may have been accidentally presented to the unsympathetic lens." That is just the sort of happy-go-lucky method which we protest against when we insist on the cultivation of artistic feeling and individuality in our photographic work.



## Letters to the Editor.

### THE VIENNA EXHIBITION.

SIR,—The reply of Herr C. Srna, as President of the Vienna Amateur Club, to my letter, which appeared in your journal's issue of January 2nd, concerning the forthcoming Vienna Exhibition, deals at some length with some less important matters, to which I must refer only briefly. I made no comment upon the choice of the jury, as, although it may be open to criticism, I pointed out only that such a jury will not help a state of things, to criticise which was the chief object of my letter. I would further protest against the insinuation that I wilfully distorted a slip of the pen in the German circular, concerning the admission of professional work. It is certainly to be regretted—as you have pointed out already—that in a carefully arranged exhibition things should not be clearly stated, that slips of pen occur, and that there should be contradictions between the English and German circulars. It was in the presence of a few amateur photographers that—not speaking German myself—an Austrian gentleman translated the original circular, in which it was clearly stated "that professional portraits and landscapes are not admitted," and also a later circular (which I regret not to have at hand for quotation from the original), in which, on this point, an explanation was given, that only non-artistic pictures were implied under the title "professional portraits and landscapes." But the question of admission of professional work is not that with which I had to deal; I only wished to know whether in professional work also it was urged to be the entire work of the exhibitor, and I asked if it was to be exposed in separate classes or to compete with amateur work. In an exhibition which should be a model one, such important points, I think, should be clearly stated. I regret that Herr Srna has given no answer to this question.

My letter had one main object; it was a protest against the admission of work into a competition arranged by amateur photographers, which is not entirely the work of the exhibitor, viz, from the exposure, through development, retouching, printing, toning, and mounting, to the finished picture. In order to enforce this, I considered it my duty to direct the attention of English amateurs to this point.

And now let me most emphatically assert that my protest was not based on unfounded scruples which I have raised. A man must indeed be short-sighted to believe that the exhibition was contemplated on the basis which we urged should be accepted

\* Karl Robert, "La Photographie Aide du Paysagiste," p. 110.



and that the Committee, up to the appearance of my letter, held such views. Herr Srna actually asks us to believe that such a distinct and essential condition that the picture should be the entire work of the exhibitor, was pointed out neither in the conditions of the exhibition nor in the circular of invitation by one single word, because from the very first he deemed this a matter of course, because he considered "that a passage requiring an express declaration as to how much of the work the exhibitor himself has done as a degradation, nay, well-nigh as an insult, for amateur and professional alike." How can Herr Srna expect that such an explanation shall be accepted? Was the first exhibition, which he arranged about two years ago, based on such principles? Far from it. Has it been the general custom in Austria, or even in Germany, in photographic exhibitions? No. Is Herr Srna unaware that there are yet photographic exhibitions where such regulations are not imposed upon exhibitors, or where they are only partially required? And in consequence how can Herr Srna expect that the photographic public, to which he addressed his invitations, will know and correspond with conditions which are not mentioned in his programme? Herr Srna has now *trop de zèle*, when he considers it even "an insult to amateurs and professionals alike" in clearly stating the conditions of the exhibition. In the form to be forwarded to the Committee for application for space, not a single word on this point is contained, and no declaration whatever is asked from the exhibitor. Can Herr Srna deny that there are still photographers who do not share the views he held secretly, or who cannot comply with them? By what means then, in the absence of such conditions clearly stated, and the declaration of the exhibitors that they agree to abide by them, did Herr Srna expect to decide whether the pictures sent were really the entire work of the exhibitor?

No, the revelation Herr Srna suddenly made is too astonishing and ingenious to be believed.

But Herr Srna now goes even further; he exclaims, "Experience and the most extensive (!) technical knowledge must go hand in hand with artistic perception to achieve what is called art in photography, and therefore we almost feel ashamed of asking the competitor how much of it he has done himself." *Quelle pruderie!*

How can Herr Srna make me and others believe that he is so orthodox in this respect, that to ask how much of the work the competitor has done himself "is a shame," when, at the Vienna Exhibition he arranged in 1888, no question whatever about the workmanship in the pictures was made, no condition whatever on this point prevailed, a great many pictures were exhibited, and decorated with the highest distinction, in which the exhibitor, at the utmost uncapping the lens, was the spectator of the work which others had done; when, besides this exhibition, famous in this respect, only last year there were two exhibitions, one held in Frankfort, the other at Budapest, at both of which not the slightest restriction concerning the admission of pictures was made, and when both these exhibitions were patronised by the Vienna Amateur Club, and in both exhibitions part was taken by the Vienna Club as a body, under the leadership of its President, Herr C. Srna, and by members singly, even by Herr Srna with his own pictures, which also had their share of the shower of medals, which Herr Srna duly accepted.

I think this is enough. My first letter had only one aim, to speak in the interest of amateur photography, of which I am an ardent admirer, to speak in the interest of the Amateur Club of Vienna, which I hope to see flourishing and gaining that position which in time, no doubt, it will be entitled to hold. But I felt compelled to defend my own good faith. I should have been very glad if Herr Srna could have given in with a simple "peccavi" or even without it. He has not done so! His last sentence, "on the harmony of English and Austrian photographers," is wholly unnecessary; no international conflict was in view, and it was only intended to interfere with a clear, impartial judgment of the case and to create a partial feeling against your correspondent.

Never has it been so clearly proved that opposition, although often an ungrateful task, is of value in public matters. It is rather a matter for astonishment that I, a humble worker in photography, have been able to drive the whole committee of this exhibition to such straits, although I know that the chief merit lies in the standing of the journal in which my letter appeared and in the support which my opinion received.

The Vienna Committee—when it has now changed altogether

its standpoint to which I am the first to congratulate it—should once more state clearly the conditions of the exhibition, and *not be ashamed* to point out that the whole work—exposure, development, retouching, printing, toning, mounting—must be the exhibitors' own work, and should, therefore, require from exhibitors a declaration that they comply with these conditions, even now, as already the time for entries is over, as without that the whole announcement will remain a delusion. The Committee should try to give a keen eye to see that such conditions are fulfilled, and then Herr C. Srna will have no more thankful and obliged servant than

AN AMATEUR PHOTOGRAPHER.

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#### LANTERN EXHIBITIONS.

SIR,—It recently fell to my lot to exhibit the lantern slides at our society, and possibly the results of my experience may render the task more easy and satisfactory for others in a similar position.

I was using bags and mixed gas jets with a biunial lantern in a very long hall, so that with 14 in. focus lenses we had about a 16 ft. disc, and it was very difficult to get light enough for even moderately dense slides.

My first trouble was that my assistant had reversed the gas tubes, and hence the bye-pass being on the oxygen side, on attempting to dissolve, the second lantern was always extinguished. I got over this difficulty by using only one lantern. Moral—always see that the tubes are properly connected yourself, and that the dissolving tap works properly before uncapping the lenses. Next the slides were to be announced from the platform before their appearance. Though I myself was the author of this system, I see that it is certainly wrong. If possible, they should be announced by their author as soon as they are on the screen, as no amount of care will avoid mistakes either by the reader or the exhibitor.

Again, the slides, being by many different workers, were marked in various ways, one series, indeed, being without any indications, and amongst the latter were several marine and aquatic scenes in which reflections were so perfect as to make it a matter of guess by the dim light available as to which was the right way up. I would insist most strongly in future that every slide for exhibition should be marked in accordance with the well-known rule—two spots at the upper corners of the film side—and would further suggest that if a light-coloured mask be used, these spots should be of a conspicuous colour upon it. If they were put under the cover-glass, they would not be liable to get detached, an accident which may occur in much-handled slides. I found that this had occurred to many of the AMATEUR PHOTOGRAPHER prize slides when recently showing them, although I believe they were all properly marked when they started on their round. They formed, by the by, a most excellent collection, and gave us a delightful evening.

Lastly, "gentlemen are requested not to talk to the man at the wheel"—I mean at the lantern. The exhibitor has quite enough on his hands without the advice and still more the assistance or interference of well-meaning but troublesome friends. If he wants help, let him call for it, and if he is using bags have plenty of weights on them; it is easy to reduce pressure at the burners, but a half-filled bag will not give nearly the same pressure at the jets as a very distended one when equally loaded.

This is all, no doubt, stale advice, but I wish I had had it impressed on me a week ago.

A COMMITTEE MAN.

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#### DR. EMERSON'S RENUNCIATION.

SIR,—There are one or two matters of public interest in Dr. Emerson's eccentric "Renunciation," and one or two requiring personal reply, which I should like to refer to briefly. It would be waste of time to take this undignified production too seriously, for it is evidently only the outcome of violent egotism and offended vanity.

First, do not let photographers suppose that Dr. Emerson has the right to claim any originality in regard to naturalistic art. He has merely adapted to photographic methods ideas current amongst certain artists. He is, therefore, neither entitled to claim further recognition than this, nor has he the slightest right or power to order the funeral of naturalism in photography. Secondly, the limitations of photography are not so great as he now, for vindictive purposes, wishes to make out, for the individuality of the worker is freer than he asserts, and he has allowed



himself to be misled by an absurd confusion about Messrs. Hurter and Driffeld's experimental results. The power to alter relative values by exposure, development, and other purely photographic means is infinite. Thirdly, if "all writings and opinions upon art are as the crackling of thorns," why does Dr. Emerson return to his vomit in this pamphlet, and re-discuss certain art matters; and why, in the name of all that is consistent, does he threaten photographers with another book on art later on? Fourthly, what on earth has "the dexterity" of the man with paint and brush to do with the matter? The photographer's dexterity as an artist is *not* a matter of a few weeks. It takes as long as the artist's to cultivate. It is a mental training, and the handicraft follows the brain. Fifthly, Dr. Emerson is wise to give up every "school" title and to take to admiring "all good artists and all good art." It is what every sensible person has always wished to do, and after passing from one violent extreme to another, we may hope he will in time reach a reasonable medium. Sixthly, I believe it to be false that anyone has claimed novelty in the use of rough papers. All the same, these pictures have spoken and will speak for themselves to those who are less amateurs than Dr. Emerson, who has, "by the sweat of his brow, learned under a master!" Long before Col. Noverre's excellent specimens were exhibited, I, and probably many besides, had spoken to Mr. Willis and others about the necessity for such rough-surfaced papers. Seventhly, the fact that Dr. Emerson should have left the Camera Club cannot fail to make that institution more attractive and comfortable to all reasonable and sociable people. Eighthly, Dr. Emerson's repudiation of the claims of photography as a means of capable artistic expression is, perhaps, only natural. In my opinion there is something sadly wanting in most of his photographs, and he himself is probably now finding this out. I trust he is devoting himself to some other pursuit more suited to his abilities—a humorous friend of mine suggests fretwork.

In regard to the personal matter, and what Dr. Emerson calls my "superficial knowledge," I shall be well pleased to let my photographic pictures speak for themselves, and stand side by side with his, before any competent and unbiased judge. The quotation used from my private letter seems to me to read in refreshing contrast to the rest of the pamphlet. Dr. Emerson was anxious *at that time* to recognise what I had done for naturalistic photography. I was not, however, particularly anxious to be very closely identified with Dr. Emerson and his violent aggressiveness. A little of the same appearance of modesty would not injure him. The whole of this business appears to have arisen first in that I dared in a very appreciative criticism to point out Dr. Emerson's weakness in respect to treating figures in photographic pictures. In reply to that he wrote: "You are wrong about my figures; they are as yet alone"—a sweet bit of Emersonian modesty. From that time, although treating with me to write for a journal he proposed to start which was to knock everything else endways, he seems to have begun to say hard things about me to others. That I should have ventured to differ from him in respect of the qualities of diffraction photographs caused him further attacks of spleen, and, finally, the fact of my being invited to read a paper at the Society of Arts appears to have upset the whole of his years of study on naturalistic photography, and wrought him up to the pitch of fulminating this mad prophlet. The letter which he calls an "expostulation," and to which I sent no reply, was one long violent insult, alternating between threats and wheedling. I simply allowed Dr. Emerson to stew in his own bile. I was too busy to disturb myself with bandying insults.

As to the unfairness he complains of at the Society of Arts, he does not mention the name of the friend whose speech was misreported. It can hardly have been Mr. Maskell or Mr. Newman, and they were the only speakers who *read* their speeches. All the reports seem to me to be fairly accurate so far as they go.

Finally, I do not wish it to be supposed that I do not sympathise with Dr. Emerson in his affliction. There are some grains of sense in the pamphlet, more, indeed, than could be expected from anyone even with a good liver after three and a half months' solitary study in a house-boat during the recent weather. But every reader ought to be cautioned against paying much heed to the outbursts of one who is blown about by every wind of doctrine—now a well-expressed word of a "great painter," now the influence of a common everyday artist, and now a misunderstanding of a scientific experiment. Give such an one three and a half months' further confinement in a house-boat and

a fresh quarrel, and a new crop of theories or burning thereof may be expected. It is certainly to be hoped that no photographer who is working out his own salvation by serious study and practice will be deluded by such cheap trash as this pamphlet contains. Let Dr. Emerson cast all the copies of "Naturalistic Photography" upon the dust-heap; let him, as I think, wisely, succeed in covering up the crude and absurd directions "To the Student" in every one of the volumes of "East Anglian Life," which, with his genius for advertising himself expensively, Dr. Emerson sowed broadcast over the country—let him do all this and go on "renouncing" to the crack of doom, and he will only publish his own vanity, and will not be able to stem the tide of advancing culture amongst photographers.—Yours, etc,

London, February 2nd, 1891.

GEORGE DAVISON.

#### TO DR. EMERSON.

SIR,—As a brother photographer I cordially return your salutation. I am not among those who, you say, have been "misled" by you, neither have I ever harboured feelings of enmity against you or your dogmas. Your expression of respect for those scientific followers of our craft you name will meet with cordial response, but why, oh why, should no admiration, respectful or not, be accorded to the men whose productions have given real "æsthetic pleasure" to the photographic world, such men as Gale, Robinson, Gibson, and others? With regard to the soft general diffusion of outlines in Mr. Davison's recently exhibited pictures, I must confess that, if those works are a faithful exposition of your teaching only, I have not read you aright. These works have commanded attention and compelled admiration, and I admit that I judge of a man more by what he produces than by what he has preached, and if this be the general view small wonder that societies have given attentive hearing to the last-mentioned gentleman's disquisitions on theory. Much has been said over and over again on the question of the relative claims of painting and photography to rank as art, and though I would like to add a few words on the point this is not the time.

Certainly no sane man would compare a photograph with, or rather would elevate it to equality with, the beautiful handiwork of a modern painter, yet your wild strictures on photography as an artistic method of reproducing nature are, justly, to be severely condemned.

Photography, while, may be, it is an assistant to artists, is not merely a "handmaiden" or servant; it is nearer the mark to say it is a teacher, in competent hands it is a beautiful expositor of nature and a good medium for exhibiting a man's artistic taste. Your witty but caustic epitaph will certainly amaze many, as it has me, though its literal truth be questionable—but there! it is an epitaph. There are many, possessing, like myself, a great liking for pictures of beauty, who will still endeavour to produce them by means of photography, and will continue the practice of their favourite hobby as heretofore, quite oblivious of the facts that naturalistic photography lived, died, and was buried.—Yours, etc.,

A. B.

SIR,—In this week's AMATEUR PHOTOGRAPHER there appears a wonderful proclamation to the photographic public, that will doubtless throw the camp of the Fuzzites into terrible confusion, and bring many a good photographer to an untimely grave, by causing him to indulge in an uncontrollable fit of laughter.

The trusted leader, the mighty champion who never required the assistance of a trumpeter to help him in proclaiming his own infallibility, the man who was never wrong, the man who could not learn but only teach, this man on whom the Fuzzites had pinned their faith and whose banner they followed with proud delight, has deserted his devoted followers and left them to get out of the quagmire into which he had led them as best they can. Truly, this is a calamity! How can the poor amateur, who has been reading columns of letters and articles on photographic art till his poor head felt in a whirl, how can he, I say, survive this irreparable loss? For I venture to say that

Take him for all in all,

We shall not look upon his like again.

But what has Dr. Emerson done? Seeing that his wild and erratic views found no favour with moderate and intelligent men, he has thrown the whole thing up in disgust, like a spoilt child that breaks his toy and goes away howling with rage and passion. But he does not content himself with retiring quietly from the field; he turns about and pours forth the full volume of his wrath on the devoted head of his former love, Photo-



graphy; accuses her of being unable to be artistic, unable, in fact, to produce a picture. This I venture to totally deny. Because Dr. Emerson owns that he, "even" he, cannot produce a picture it does not follow that there are not other men who can do, and have done, so, although it is possible they have not made quite such a parade of their works as he has done. Such men as Robinson, Gale, and others have produced pictures, and real pictures too, and they will continue to do so, despite the dismal croakings of this ex-realistic raven.

What I object to is—not Dr. Emerson's retirement from the ranks of artistic photographers, but that he should undertake to tell us there is no art in photography, when he has just an instant before virtually admitted that he does not know anything about it. This is really too much, and were it not for the fact that he himself tells us that he is "saner than ever," we might be tempted to think otherwise.

We shall all look forward with interest to the time when the new Emersonian Koran shall appear; meanwhile it will be interesting to see how his former followers will like being called "charlatans, photographic imposters, pickpockets, parasites, and vanity-intoxicated amateurs."—I remain, yours faithfully,

ILSLEY R. CODMAN.

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#### ACTINIC POWER OF LIGHT IN THE TROPICS.

SIR,—I send you herewith some actinometer readings recently taken during a voyage from London to Melbourne. The idea was to prove for myself the variations in the photographic power of light as the equator is approached. The ground had previously been broken by Mr. O'Farrell, who experimented between London and Aden, and, in an article contributed to the *British Journal of Photography* a year or two ago, he states that the light at Aden (about 13 degs. north latitude) in September is twice as actinic as the best June light in England. This is contrary to the opinion I had heard expressed more than once, viz., that tropical light is less actinic than June light in England, and my own very slight experience appeared to confirm this opinion, for a few snap-shots I once took at some diving boys at Aden certainly did seem to require a lot of persuasive coaxing before yielding sufficient detail.

The following are my results, which were obtained with a Stanley actinometer, freshly charged by the maker just before starting, and kept in an air-tight despatch box when not in use —

Date.	Place.	Position.	Hour.	Actino- meter Reading in Seconds.	
				Sun.	Sky.
Oct. 2	London (Pall Mall)	Lat. 52 N. ...	1 p.m.	13	13
" 5	Centre Bay of Biscay	" 46 N. ...	10.30 a.m.	1	1
" 7	Gibraltar ...	" 36 N. ...	Noon.	1	3 1/2
" 11	Malta ...	" 36 N. ...	Noon.	1	3
" 14	Port Said ...	" 31 N. ...	1 p.m.	2 1/2	2 1/2
" 20	Aden ...	" 13 N. ...	Noon.	2 1/2	2 1/2
" 29	At sea ...	Equator. ...	Noon.	2	2
Nov. 1	" ...	Lat. 13 S., long. 95 E.	11 a.m.	2	2
" 4	" ...	" 26 S., " 107 E.	Noon.	1 1/2	2 1/2
" 7	Albany ...	" 35 S., " 118 E.	Noon.	2 1/2	2 1/2
" 13	Melbourne ...	" 37 S., " 145 E.	Noon.	2 1/2	2 1/2

\* Full.

Although the Pall Mall reading was taken with the sun shining out of a cloudless sky, there was the faintest suspicion of haze, and as October light at noon in England is generally reckoned to be about half as actinic as the best June light, I reckoned that at noon in June this actinometer would have darkened in three-quarters of a second; and if Mr. Stanley's papers are of unvarying sensitiveness this reckoning would be correct, for readings taken in June at Torquay before the instrument was recharged gave this result.

The conclusion that these experiments point to is that within the tropics at noon, any time of the year, light is 50 per cent. more actinic than in England at noon in June.

In all cases the time was taken by estimation. This may sound rather rough and ready to many of your readers, but any of them who have done astronomical transit work can assure the sceptics that it is very easy, with a little practice, to count seconds and parts of a second.

In the case of the readings for Gibraltar and Malta, three quarters of a second was too little and one second too much, so the difference was split.—Faithfully yours,

Melbourne, December 27th, 1890.

ALFRED CORNISH.

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#### ARISTOTYPE PAPER.

SIR,—As queries frequently occur in your columns—two in the current number—respecting this paper, I would like to say a word thereon, although it has all appeared more than once already, as, whether by good luck or good guiding, I have escaped some of the pitfalls into which others seem to have fallen.

First, as to toning. I think a good many difficulties have arisen from the mistaken (at least, I think so) idea that it is economy to keep the toning bath and use it repeatedly. If you are working regularly every day, it is all very well, but how many amateurs do so? As a rule they tone a few prints to-day, and, may be, not again for weeks: meantime the bath has time to play all manner of tricks, such as precipitation of the gold, etc., etc. Ten or twelve ounces of toning solution—enough for a dozen half-plate prints—is value for about twopence; it is carefully put by, and when next wanted proves useless, but this fact is not discovered till perhaps another dozen pieces of paper, costing eighteenpence, are ruined. So the account stands—profit on bath, 2d.; loss of prints, 1s. 6d.; balance on wrong side, 1s. 4d. Surely this is bad economy. My practice is almost identical for albumen paper and Aristotype, and is as follows: Borax, 1 oz.; water, 80 oz.; of above take 10 or 12 oz. and add 1 gr. gold. With this I can tone satisfactorily three 12 by 10 sheets, and then it goes down the sink. It is a great advantage to put the print, when just rinsed from the hypo, into alum; this entirely obviates the exceedingly troublesome tendency to curl at the edges. Other workers use the alum at an earlier stage. Sometimes, if the action is sluggish, a trace of fresh gold starts the bath off again as lively as before. I have never tried the sulpho-cyanide bath, much preferring the tones given by the borax, and have had a fair amount of success with it on Aristotype. I have not hit it off so well with Oclerotype. The same toning solution works admirably with albumen paper, but for it should be slightly warm, say 75 degs. This temperature would blister Aristotype all over.

As to mounting, the thin card used by professionals to back enamelled prints is much better than cartridge paper. When the print is squeezed on to the ferrotype and while quite damp, go over it with a strong starch paste, and having squeezed the card down to it, let all dry gently and peel off. For final mounting I find thin glue answers well if the mount be damped and all put under pressure for a few hours. I find the glue sets before I have time to lay the print down, but the mount being damp they adhere; when kept pressed till dry. If too much glue be not used, there is no fear of its oozing out.—Yours, etc.,

GREENWOOD PIM.

N.B.—Toning for Aristotype must be carried a good deal farther than for albumen.



**Madras Amateur Photographic Society.**—The fifth half-yearly competition of the above society took place on the 3rd December. The subject for competition was "A Study of Architecture," and the judges' awards were:—Large views—Silver and bronze medals, Mr. F. Dunsterville; certificate of merit, Mr. J. C. Hannington. Small views—Silver and bronze medals, Mr. F. Dunsterville; bronze medal and certificate of merit, Mr. E. W. Stoney; certificate of merit, Mr. C. Michie-Smith. Lantern slides—Silver medal, Mr. E. W. Stoney; bronze medal, Mr. F. Dunsterville. A special prize for best "Landscape" was competed for by eighteen views, and the prize was awarded to Dr. A. G. E. Newland. The total number of exhibits of all kinds was 110.

**Fry's "Naturalistic" Bromide Paper.**—The Fry Manufacturing Company have come to the front with a very rough surface—Whatman—bromide paper, which is most excellent for views of whole-plate or larger size. We have tried the paper, and find it very easy to work, and soft tones, almost equalling those of a platinum print, can be obtained without difficulty. For those who desire a rough-surface paper, and have not the time or desire to prepare it for themselves, the new comer will be found all that can be desired. Messrs. Fry, in their pamphlet on the subject, make a few sensible suggestions with reference to the paper, one of which we will quote:—"The paper does not suit every subject. Try it upon a suitable one to start with, and thus avoid disappointment. When finished, the print must be viewed and judged from a distance, say five feet or more, away. The effect and breadth is lost if examined at close quarters."



# Studies in Art for Photographers.

BY REV. F. C. LAMBERT, M.A.

## CHAPTER II.

AMONG the various terms used in connection with pictorial composition, perhaps the word *Balance* claims first attention.

*Balance* is applied to the direction of lines, masses of light and shade, degrees of interest, attaching to various parts of a picture, and to colour; with this last we have no concern.

First then with regard to the balance of lines. It is a matter of simple observation that when there are several prominent lines running more or less in the same direction, these lines convey to the mind an impression of movement (sometimes towards their direction of convergence). In

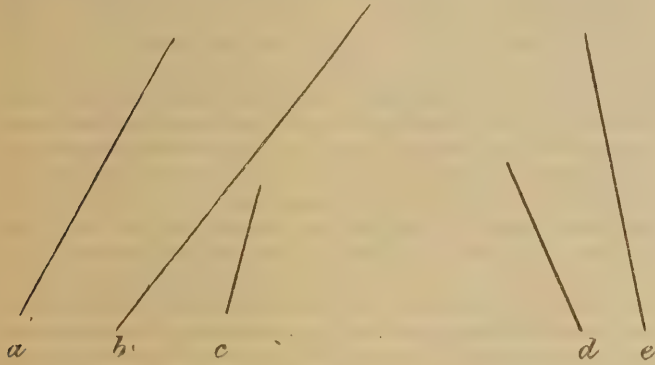


FIG. 1.

most cases this is an undesirable result. So that by way of counteraction some one or more important lines are required to be arranged to run more or less in a direction contrary to the first-named set. In fig. 1 the group of lines *a, b, c* are more or less in the same general direction, and by themselves give one an idea of a general tendency to "topple over" towards the right. The same may be said of the lines *d* and *e* towards the left. Observe the effect of covering over first one group and then the other; and note the effect of the two groups taken together, how these seem to compensate, counteract, balance each other.

Next take the case of curved lines in fig. 2. The two curved lines *f g, m n*, have their centre of curvature to the

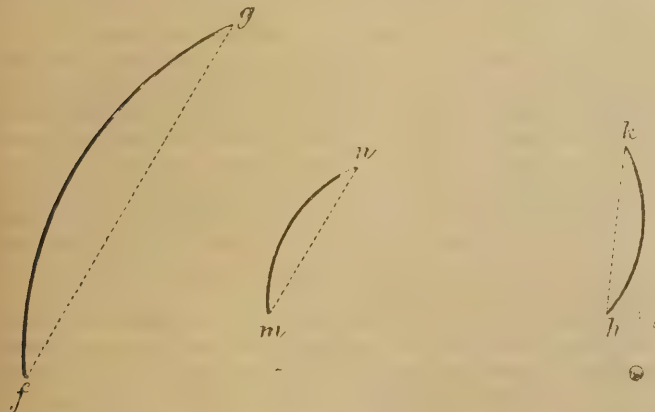


FIG. 2.

right, or are concave towards the same direction. These two standing alone are unsatisfactory. Now reverse *m n*—i.e., cover it over for a moment, and let it be represented by *h k*.

Observe now that *f g* and *h k* are concave in opposite

directions, and appear to support, complete, or balance each other. Note also that the chords of the arcs (i.e., the dotted lines joining the ends of the arcs) are in all three cases more or less parallel. Observe now the effect of joining the curves *f g, h k*, end to end, and how this is infinitely



FIG. 3.

preferable to joining *f g* and *m n*. Hence the direction of curvature is a matter of first importance. All sorts of curious and interesting things have been said about Hogarth and the line of beauty—as, for instance, that the line of beauty was composed of two curves in opposite directions, and such that the radius of one part was double that of the other; and the former curve one and a half times as long as the second. Another view is that if any straight line, *A B*, fig. 3 be taken and divided into five equal parts (as at *c, d, e*, and *f*), then the line of beauty will have these lines, *A e* and *e B* as the chords of two curves in opposite directions, *A e* and *e B* being three-fifths and two-fifths of the total length from *A* to *B*.

All these matters are at present chiefly interesting as showing that there is a general consensus of opinion, firstly that two curves in opposite directions produce a satisfactory impression; and, secondly, that these curves should not be of equal length or curvature.

These two points are well worthy of the most careful attention, although they seem to have escaped notice in works upon composition and form.

The idea of stability seems to be closely connected with

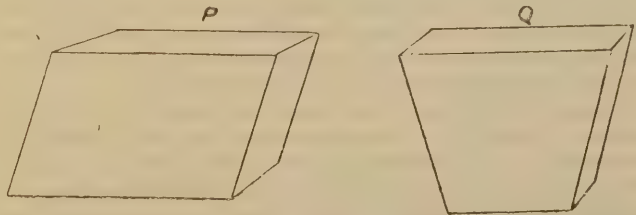


FIG. 4.

what we have already termed balance. In fig. 4 the outlines may be taken to represent roughly two solid bodies seen in perspective. Leaving out the three horizontal lines which are common to both, in *P* we have six lines leaning over more or less to the right, in *Q* we have one line leaning over to the left. In both cases the centre of gravity is well within the supporting base, and possibly *P* is in fact the more stable of the two, yet the first idea conveyed by the contour lines is that *Q* is better as regards balance; this effect is no doubt, in part, at least, conveyed by the one compensating line above referred to.

No doubt many other instances of the balance of line will easily be found by the student. We may briefly sum up our results, and say that a group of (more or less) straight lines which tend in the same general direction, other than horizontal or vertical, seem to call for other similar lines, tending in a direction contrary to the first-named group. Be it observed, however, that these two sets of lines are very seldom satisfactory when they are at (or nearly approaching) a right angle. Secondly, groups of either horizontal or vertical lines (although not calling for compensating lines) usually convey an idea of tranquility or monotony; and sometimes an effect of cutting up the picture into



segments. Thirdly, that groups of horizontal and vertical lines together give a strong impression of solidity and rest.

The balance of curve may be observed in countless examples in animal and vegetable forms, especially in the bodies and wings of birds, curves of the human body, etc. In the plant world, almost any leaf taken at random will show the line of beauty either in its contours or veins and ribs, as, for instance, the outline form of the lily of the valley leaf and flower stem, the curve of the bell, etc. Balance of line and curve (using those words in the rough and ready sense) may be seen in almost any photograph of hilly or mountain district, and also in a more formal manner in those cases where man has had a hand in fashioning nature, *e.g.*, in cultivated and pruned trees, avenues, etc. It will be observed that where man shows his handiwork, it generally is painfully evident in a formal symmetry which is almost always *un-*, *i.e.*, *contra-* natural. Balance of line and form is observable in every direction among natural growths. Precise symmetry is comparatively rare, and it is chiefly observable in the parts of things rather than among several things.

With regard to the balance of light and shade, and interest of subject, these could only be illustrated by more elaborate diagrams, and therefore must be reserved. It will be sufficient for the present to say that balance of light and shade refers to the disposing of the larger masses of light and dark, in such way that their arrangements are generally conducive to the desired effect without attracting any attention to *too* much of one or the other at any one part. This is to some extent antagonistic to breadth; *i.e.*, excess of either may destroy the other; both of which are desirable in due proportion.

Balance of interest is in a similar way opposed to *concentration*.

The interest may be so concentrated that one only sees a small point or area, all else is felt to be superfluous. Or again the interest may be so cut up and distributed that there is no leading theme—no main idea or attraction. These features also will present themselves in various examples.

In some works also we may say that there is a something which, for want of a better term, we may call balance of sentiment, as, for instance, where a poetic sentiment is to be presented in two or more slightly differing phases in different parts of a work. The proper apportioning of the several phases requires a subtle and masterly division or balance, so that all the parts may be in true harmony.

(To be continued.)



## The Construction and Use of Photographic Lenses.

By CLEMENT J. LEAPER, F.C.S.,

Instructor in Photography, City of Dublin Technical Schools.

### CHAPTER III.

#### THEORETICAL PRELIMINARIES.

It will be convenient before proceeding to give any data, to explain the conditions which what we may call an ideal lens must fulfil, conditions all of which are, however, rarely realised in practice.

These may be stated as follows:—

- (1) The image on the ground-glass must be sharp.
- (2) The image sharp on the ground-glass must be capable of yielding a negative of equal sharpness.
- (3) The image given by the lens in its usual position, *i.e.*, with its plane parallel to that of the object, must not suffer

in sharpness when the lens is caused to make an angle with the plane of the object.

(4) The image must be capable of being received on a flat surface.

(5) The lines of the image must be in conformity with those of the object.

(6) The lens must not form an image of the aperture of the diaphragm on the ground-glass.

The non-fulfilment of these conditions is said to be due to (1) spherical aberration, (2) chromatic aberration, (3) astigmatism, (4) curvature of the field, (5) distortion, (6) flare spot.

(1) *Spherical Aberration*.—A lens used in the ordinary way is employed to obtain a diminished image of whatever is in front of it. To do this, the object is placed at one conjugate focus of the lens, and the ground-glass at the other, the former distance being much greater than the latter one. In mathematical language the object is situated at *infinity*, the rays proceeding from it being in consequence practically parallel. Now, in order that a distinct image shall be formed on the ground-glass, the lens must cause all rays proceeding from the object to converge at one and the same point, whether those rays pass through the central portions or through the margins. The only form of lens which would accurately fulfil those conditions is a parabola, but this form cannot be adopted in practice, for the following reasons. In grinding a lens as previously described, it is absolutely essential that the motion be irregular, *i.e.*, that the lens or pattern be moved up or down or to and fro and in a circular direction at one and the same time. If both pattern and lens remained stationary, the lens would possess a flatter curve than the pattern, owing to the fact that the velocity of revolution is greater at the margins than it is at the centre. To compensate for this, it is necessary to alter the axis at every instant.

But it is quite clear that this condition can only be fulfilled when both surfaces are spherical. If they were parabolic, or of any other form, they could only be ground into each other on condition that the axis remained unchanged throughout.

Practical considerations have then caused the spherical form to be adopted in preference to all others, and as in consequence marginal and axial rays no longer converge to the same point, the defect so introduced is called spherical aberration, being due to the spherical form of the lens.

It is easy to verify the existence of this defect by pointing a spectacle lens of short focus at the sun, so as to form an image on a piece of paper held behind the lens. Under these circumstances it will be found that the image will be surrounded by a halo of light. But if the lens be stopped down to about a fifteenth of its focal length, this halo will disappear, and the image will gain considerably in sharpness.

The reason of this has already been explained in my article on page 364 (vol. xii.), to which the reader is referred.

By repeating the experiment with lenses of different foci, but made of the same kind of glass, it will be found that the more curved the surfaces or the shorter the focus, the greater will be the aberration.

On the other hand, if two lenses of the same focus but of different material be compared, it will be found that spherical aberration is smallest in that lens which is least curved, *i.e.*, that made from the most refractive substance.

It follows from the last statement that it should be possible to construct a series of convex lenses having the same focus but showing spherical aberration in a varying degree.

Such a series of lenses is shown in fig. 1, the relative aberrations being indicated by the figures beneath each lens. With a concave lens spherical aberration still exists, but as in



this case the marginal rays are brought to a focus *nearer* to the lens than the axial ones, the aberration is said to be negative. The latter kind of aberration is conventionally represented by -, the former by +.

For similar reasons to those given higher up it is possible

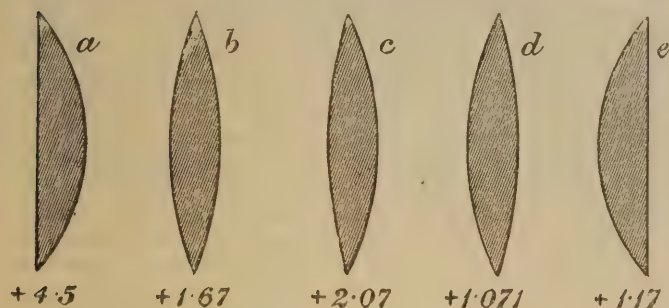


FIG. 1.

to construct a series of concave lenses having the same foci, but of varying degrees of spherical aberration.

Such a series is shown in fig. 2.

A reference to figs. 1 and 2 will show how this aberration is practically corrected.

If, for instance, we combine *a* and *e*<sup>1</sup>, spherical aberration is completely corrected, but the refracting power being at the same time neutralised, the two lenses will merely act as a plate of glass with parallel faces.

If, however, *d* and *e*<sup>1</sup> are combined, refraction is again neutralised, but the combination will possess negative spherical aberration to the extent - represented by  $-4.5 + 1.071 = -3.429$ . But by grinding down *e*<sup>1</sup> so as to shorten its focus, a point will finally be reached by which the spherical aberration of the combination will be destroyed,

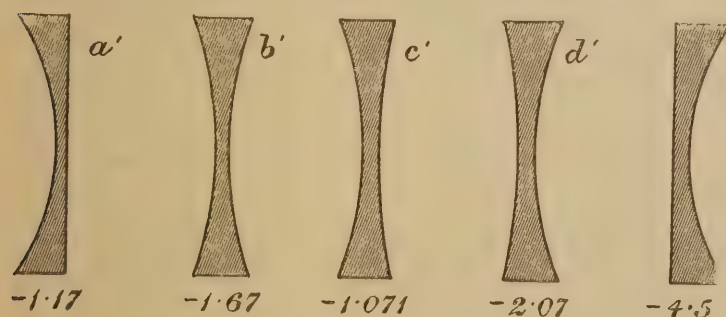


FIG. 2.

whilst since by altering the focus of *e*, we make its refractive power different to what it was before, the combination will now act as a lens, and bring rays to a focus at one point.

It will be seen from this that the correction of spherical aberration depends not upon the actual foci of the lens, but upon the relation existing between the curvatures of their surfaces.

The mathematical expression for the correction of spherical aberration is given thus in Herschel's "Light":—

$$O = \left\{ \begin{aligned} & -\frac{a}{c} \{ (2 - 2d^2 + c^3) e^2 + (c + 2c^2 - 2c^3) ef + f^3 f^2 \} \\ & + \frac{b}{d} \{ (2 - 2d^2 + d^3) g^2 + (d + 2d^2 - 2d^3) gh + d^3 h^2 \} \\ & - \frac{ab}{d} \{ (4 + 3d - 3d^2) g + (d + 2d^2) h \} \\ & + \frac{a^2 b}{d} \{ 2 + 3d \} \end{aligned} \right.$$

In which

*ab* = refractive powers of the two lenses.

*cd* = refractive indices of the two materials.

*ef* = curvatures of first lens.

*gh* = curvatures of second lens.

We shall learn further on how this complicated equation may be considerably simplified.

If two extremely fine dots, touching each other, are caused to form an image by means of a lens possessing spherical aberration, it follows from what has been said that the two images will overlap, *i.e.*, the two dots will be represented by two circles. And since any object may be looked upon as consisting of fine dots, or mathematical points, we have in the dimensions of the circle constituting the image of a point a means of measuring the sharpness of the image yielded by the lens in question. This circle is termed the *circle or disc of confusion*, and under average conditions it has been found that if it does not exceed one-hundredth of an inch the eye examining the picture at the distance of normal vision will see the disc as a point. Accepting then this definition, we may say that an object is in sharp focus when the diameter of the image of any point on it does not exceed one one-hundredth of an inch.

*Chromatic Aberration.*—It has been already pointed out that a simple lens acts as a prism, *i.e.*, disperses light as well as refracts it; in consequence of which the visual focus of such a lens does not coincide with its actinic one.

In order to understand how this aberration can be corrected, it may be necessary to remind my readers that the refractive index of a material is the ratio which the sine of a ray in air falling upon it bears to the sine of the ray passing through it. As, however, refraction is accompanied by dispersion, *i.e.*, since all the spectrum rays are not equally refracted, it becomes necessary to choose some special point

from which the refraction can be measured. It would not do to select any one of the spectrum rays for this purpose, since these occupy a considerable extent of surface, but fortunately the solar spectrum is interspersed by a series of dark lines, which serve as standards with reference to which dispersion and deviation can be measured. These lines, called after their discoverer, Fraunhofer, are shown in fig. 3. That chosen to measure refraction is the dark line D in the yellow, and we may consequently define the refractive index of a material as the ratio between the sine of the angle of incidence and that of the angle of refraction, both being measured at the D line.

The dispersive power or dispersion of a material might be measured by the length of spectrum which a prism made of it and having a certain angle would yield, but it is more

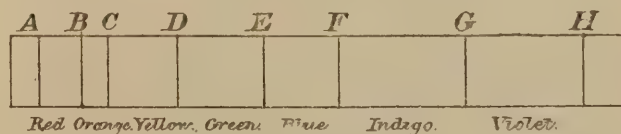


FIG. 3.

convenient to measure it by the difference between the refractive indices for certain pairs of lines, usually AD, DF, or FG.

(To be continued.)



**A New Toning Bath for Gelatino-Chloride Prints**—M. Bani recently suggested the following new toning-bath for gelatino-chloride prints:—Benzoate of soda, 20 grammes; caustic potash, 0.1 gramme; water, 450 c.cm. When dissolved, add solution of chloride of gold (1 in 150), 50 c.cm; shake well and allow to stand for two hours. The bath is ready for use when pale-rose-coloured. The tones given are similar to platinotypes.



## Photographic References.

BY MAJOR J. FORTUNÉ NOTT.

(Continued from page 60.)

### EXPOSURE.

AFTER the difficulties anent the focussing have been satisfactorily overcome, the next step towards the production of a negative is the correct exposure of the sensitive plate. And here at the very start is what is probably the most difficult part of the whole photographic procedure for the tyro to understand and regulate, for in the proper regulation of the exposure lies the crucial matter respecting all subsequent proceedings for the creation of a photograph. Of course, there exists a certain latitude, for very slight errors made in gauging the time can, to some extent, be remedied during the development; or, perhaps, it would be more consistent with facts to say that in the case of slight over-exposure this is so; but in the event of the plate being under-exposed, a good negative can never result therefrom. It may, however, be enunciated as a photographic axiom that an absolutely correctly timed exposure is necessary to produce a perfect negative, hence the great necessity for a photographer to be able to insure accuracy in this part of his work. No rule can be given, for there are so many varying circumstances that must be taken into account. All that can be done to assist the beginner in mastering the question of exposure is to point out to him the conditions which are factors in the matter, and their relative importance, and then to leave the rest to his powers of applying the information in a practical manner, and, perhaps, to pointing out the fact that he must profit by the experience which is to be gained upon the subject by every negative he produces. The question may appear a little complicated at first, but experience will soon master the difficulty, and after a few errors have been made and one or two successes have been accomplished, the faculties will quickly grasp and almost instinctively solve the question which must arise whenever a sensitive plate is exposed to the light, namely, the duration of time to be accorded to the operation.

The subjects that have to be considered are the following: The light, and the alterations in its quality for photographic purposes which the season of the year and the time of day may effect. The next factor is the sensitiveness of the plate, where experience regarding the particular emulsion being used can alone be relied upon, coupled with that approximate guide to the solution of this important question which the sensitometer number as supplied by the makers may confer. The next feature to be considered when solving the problem is the nature of the lens and the aperture at which it is to be used. The peculiarities of the scene being photographed have also to be taken into account.

But before enlarging upon each of these points, and endeavouring to illustrate the nature of their influence upon the subject now under consideration, it may be as well to refer more particularly to the various methods by which the exposure of the plate can be made, for to some extent this detail has an important bearing upon the matter.

In order to keep light out of the camera, and enable the shutter of the dark-slide to be drawn after it has been placed in its position, namely, that previously occupied by the ground-glass screen, the lens must be covered. This covering is accomplished by a small leather cap which fits tightly on the hood, and is always sold with the lens, or else by having an exposure shutter fixed to it or the camera, and to which useful instrument reference has already been made under the head of "Accessory Appliances." A shutter is only absolutely necessary when quicker exposures are re-

quired than the hand can accomplish in completely removing from and readjusting the cap on the lens; but if the shutter has the requisite regulating mechanism, allowing it to be kept open at the will of the operator, then it is always advisable to use it when making an exposure, except in cases when an exceptionally prolonged one is indispensable. The use of the cap requires skilful hands. The uncapping and capping a lens appear to be such simple proceedings that the beginner is apt to forget that there are right and wrong methods of doing them. The cap must of necessity fit somewhat tightly on the lens hood in order that it should not fall off in an accidental manner after the plate has been placed ready for the exposure. In removing it, therefore, especially when an exposure of a very limited duration is all that is required, such as that known as "cap off and on," some dexterity is required to do it in such a gentle way that no movement or subsequent vibration is communicated to the lens or camera, otherwise a blurred negative may be the result. Again, the hand with the cap must be entirely removed from the field of view with the utmost rapidity, for during no appreciable part of the time that the lens is uncovered must any of the view be obstructed by the unskilful handling of the cap. By neglecting to appreciate this fact the plate can be fogged. When this method of exposure is adopted, the attention becomes fixed upon the operation, to see that no accidents of the nature referred to have marred the picture, and in the event of the subject being a portrait, or one having objects within its scope liable to movement, then no certainty exists that everything was quiet during the time the lens was uncovered, for the eyes were elsewhere engaged. When, however, a shutter is employed, and its control is regulated by the simple method of squeezing an india-rubber ball, then the eyes can be studying the subject being photographed, and if the senses fail to discern any movement, then some feeling of security regarding the character of the negative in this respect is gained.

With that class of exposure which has been absurdly called "instantaneous," the regulation of the time is not a very easy matter, for but little reliance can be placed on the even working or correct timing of the mechanism employed in the construction of the exposing shutters. As absolute guides to the duration of the exposure, they are, therefore, simply worthless, but this information is rarely required, as the various speeds at which they can be set supply an approximate guide, which is all that is necessary in practice, and, therefore, a few testing experiments with the shutter on moving objects will furnish all the information which the photographer requires. When a quick acting shutter has to be used because the nature of the subject to be photographed requires it, as in the case of moving objects, then it follows that the duration of the exposure being a fixture, all the other appliances have to be governed by this fact. The reverse proceedings have under these circumstances to be taken than prevail when a time exposure is possible. In the one case the regulation is accomplished by calculating the value of the light, stops, and sensitiveness of the plate; in the other the stop to be used and the sensitiveness of the plate must be made to accord with the requirements ordained by the light and the speed at which the shutter has to work.

It is a mistake for anyone anxious to acquire some photographic skill, to begin by making these excessively rapid exposures. There is very little useful information to be gained from them beyond the fact that with a fairly large stop on a very bright day, a plate can be used sensitive enough to take a picture of rapidly moving objects exposed for only a fractional part of a second by aid of a shutter. Once the curiosity upon this subject is gratified, no better



advice can be given than is contained in the remark that a considerable amount of practical experience and appreciation of the factors governing time exposures should be acquired before "instantaneous work" is resumed. By adopting this method of procedure, the young photographer gains that mastery over his tools which is essential for the creation of good work, and which cannot be acquired by constantly using only one system.

(To be continued.)

## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XI.

THE SENSITIVE PLATE UPON WHICH THE IMAGE IS TO BE IMPRESSED BY LIGHT.

#### II.—THE SUBSTANCE SENSITIVE TO LIGHT.

*Silver Chloride not Sufficiently Sensitive to Light for "Instantaneous" Work.*—Fox-Talbot published his "Photogenic Process," based on this discovery, in the year 1839. He obtained pictures in the camera on paper so prepared, with an exposure of about one hour. Supposing it were possible to reduce this time to minutes, it is yet evident that in silver chloride we have a material which is not sufficiently sensitive to light to enable us to use it for securing pictures of objects in motion, which is the main purpose of instantaneous photography.

For *printing* processes, however—that is for obtaining positive copies on paper or glass of the negatives secured in the camera—silver chloride has proved of great value. All the ordinary "albumenised" and "mat-surface" sensitised paper, of which such enormous quantities are used every day, is prepared in accordance with the principles of Talbot's first discovery. Glass plates coated with the same substance are also much used for the production of lantern-slides and transparencies.

*Silver Iodide as affected by Light.*—Each molecule of the yellow compound called iodide of silver contains one atom of silver and one atom of iodine; we may therefore represent it by the letters AgI.

Attempts to use silver iodide for photographic purposes appear to have been first made by that "patient" photographer, Joseph Nicéphore Niepce, about 1825-30; but he obtained no success with it. In the hands of his partner, L. G. M. Daguerre, silver iodide proved, however, the foundation of the first commercially successful photographic process—the daguerreotype. Silver iodide was formed by exposing a plate of silver to the vapour of iodine; this plate was exposed in the camera for about twenty minutes, and was then *developed* by means of the vapour of mercury. Daguerre published this process in 1839.

Pure silver iodide is *unaffected* by light. But in the silver backing of the daguerreotype plate we have a *sensitiser* capable of attracting and combining with the iodine liberated by light from the silver iodide. Still, the *original* daguerreotype process was evidently useless for "instantaneous" work.

*Fox-Talbot adopts Silver Iodide, and bases his "Calotype" process on it.*—It was but natural that after the publication of Daguerre's work the English amateur Fox-Talbot should try to adapt to his own procedure, upon paper, the substance (silver iodide) with which the French artist had been so successful. This he succeeded in doing, and the "Calotype" or Talbotype process was patented in 1841. Silver iodide was formed upon paper, was exposed in the camera for about three minutes, and was then developed with a mixture of gallic acid and nitrate of silver.

Still an exposure lasting for "minutes"! Evidently the calotype process was not suited for "instantaneous" work. It was, however, largely practised by English amateurs for landscape work, from 1842 to 1856.

*Archer uses Silver Iodide in Collodion.*—Silver iodide was the sensitive substance used in Scott-Archer's collodion process, as published by him in 1851. With this wet collodion process, the average exposure was about ten seconds; and instantaneous pictures were *possible*, when all the circumstances were very favourable.

*The Substance Most Sensitive to Light—Silver Bromide.*—Although certain French orators, at the time of the publication of the daguerreotype process in 1839, made extravagant references to it, the fact is, that had it remained unimproved it would have been of little use. This was especially true with respect to portraiture, for the attempts made to secure portraits involved sitting with one's face floured in the sunshine for twenty minutes; and it is no wonder that "traces of peculiar agony" were all that could be subsequently recognised upon the developed plates!

The introduction of silver bromide as a photographic agent has been claimed for several workers; but we shall not go far wrong in assigning its introduction to John Goddard, a London science teacher, in 1840. The element called bromine is a dark-red liquid; and by exposing silver plates to the vapour of this liquid Goddard obtained a layer of silver bromide; also, by exposing the silver plates first over iodine and then over bromine, a mixture of silver bromide and silver iodide was obtained, which appears to have been preferred by the daguerreotypists to the silver bromide alone. Silver bromide itself is a yellowish-white solid, whose molecule contains one atom of silver and one atom of bromine; we may represent such a molecule by the formula AgBr.

*Silver Bromide takes the Lead in Photographic Processes.*—The virtues of silver bromide once made known, it was naturally tried in the various photographic processes which succeeded—and displaced—the daguerreotype; and in every case it was found to diminish the necessary length of exposure to light, thereby proving its superior sensitiveness.

But silver bromide scarcely got a fair chance until the introduction of "emulsion" work, in 1864, by Sayce and Bolton. Silver iodide makes a poor emulsion; it clots and sinks too quickly through "the liquid," while silver bromide remains suspended, and form a capital emulsion. For the same reason Dr. Maddox used silver bromide in compounding his gelatine emulsion in 1871; and all subsequent researches have proved that silver bromide is unequalled in the ease with which it is acted upon by light. By the aid of this substance embedded in gelatine, we can arrest the bullet in its flight, the meteor in its course, or the bird on the wing. No plate-maker of to-day but relies mainly, or rather exclusively, upon silver bromide for the rapidity of his plates.

*Varieties of Silver Bromide.*—In its chemical composition silver bromide is, of course, always the same. But *physically* it forms many varieties. These depend upon the manner in which the molecules are aggregated together to form particles. There is a certain degree of size of these particles which is most favourable to the sensitiveness of silver bromide to light; and this can only be obtained under special conditions and by special treatment.

In 1874 M. J. S. Stas was able to prepare six distinct varieties of silver bromide, and he then wrote, "The granular bromide (of silver) is the most sensitive substance to light with which I am acquainted."

Ten years later, the subject was studied specially from a photographic point of view, by another chemist, M. De Pittteurs. He drew up the following valuable table of



eight distinct varieties of silver bromide, which he was able to distinguish in various photographic processes.

DR. PITTEURS' TABLE OF THE EIGHT VARIETIES OF SILVER BROMIDE.

By Transmitted Light.	By Reflected Light.	Occurrence.
Semi-transparent	Orange {	Slate blue { In fresh collodion emulsion.
	Bluish-white {	Older bromide of silver in collodion wet-plates.
	Reddish-orange {	In very sensitive wet collodion plates.
	Yellowish-white {	In very old bromide of silver in collodion
Almost opaque	Violet-blue {	In very sensitive collodion emulsion.
	Greenish-yellow {	Bromide of silver in gelatine: sensitiveness medium.
	Green or violet-green {	Very sensitive gelatine emulsion.
	Blue {	Slightly sensitive silver bromide in collodion, yielding indistinct pictures. Affected by red end of spectrum.
	Indistinct	

The object of the maker of plates to be used in instantaneous photography is to secure the last variety but one (violet-blue by transmitted light, green by reflected light) of the eight forms of silver bromide enumerated in the above table. How this is accomplished we shall see a little further on.

(To be continued.)

## Exhibitions.

### MR. HAGUE'S PICTURES OF NORTH CAMBRIA.

THE sentimental poacher recently portrayed by "Q" would, we are sure, be pleased with many of the pictures by Mr. Anderson Hague, R.I., now exhibited by Messrs. Dowdeswell. There is a depth in his skies which adds not a little to the success of his landscapes. In "A Welsh Harvest" (6) he has exhibited artistic power which might well have been extended to the somewhat careless drawing of the girl in the foreground. That Mr. Hague can paint figures excellently, if he chooses, is evident from "The Return of Spring" (30), wherein two children are admirably drawn. Three floral pictures show Mr. Hague's careful botanical study, especially of chrysanthemums. The "Mill Stream" (7) exhibits a transparency in the water which is commendable. "Springtime of Life" requires a good light to show its excellencies, which are many.

### SKETCHES BY MR. CLAUDE HAYES, R.I.

IN this exhibition of sixty-six modest sketches, Mr. Hayes has wandered over Surrey hills, Sussex plains, Hampshire shores, and Dutch dales. His "View of Hindhead" (18) is not so successful as "Spring in Surrey" (26). The sky in "Mudford" (24) appears to us unnatural, but in "Sunset at Christchurch" (40) this portion of the sketch is more carefully executed. In his Dutch views, Mr. Hayes admirably depicts the primness of the houses and the level landscapes which are such a feature in Holland. But "In Holland" (56) is distinctly impressionistic, and, therefore, not so happy. "Frensham Pond" (57)—a favourite resort of artists—is admirably painted, as is also "Royal Common" (62).

## Round and about the Clubs.

### ENFIELD CAMERA CLUB.

THE first annual exhibition by the members of this Club, which was held in the Lecture Hall, Chase Side, Enfield, on Saturday, was a great success, and the members owe much to the hard work done by the Hon. Sec., Mr. J. Dudin, and the other members of the Committee. This is all the more so, because a considerable number of the members were somewhat behindhand in doing their share towards securing the success of the show. Wednesday was fixed as the last day for sending in exhibits, but on that evening those members who had sent in their frames found it necessary to send in more, so that the walls might be covered. On Thursday and Friday, however, other frames were sent in, but, of course, could not be used, the space being all occupied. This is not as it should be. With ample notice of the exhibition, surely it was the duty of every member to see that his frames were in by the day fixed, which would not only make the show more representative and more successful, but would save the Hanging Committee and the unfortunate Hon. Secretary much anxiety. We put this point before the members of other societies who are purposing to give an exhibition.

There was a very fair show of pictures, and, speaking generally, the work was good, especially when it is considered that most of the members of the Club are young workers in the art. Mr. H. T. Knight showed a couple of fine platinum prints, "Winter" and "Autumn;" an enlargement, "Chums," a boy nursing a kitten; he also exhibited several charming little marine studies, which were deserving of all praise; there were also on view his prints of negatives taken in the Lake District, which were shown at the Pall Mall Exhibition. Mr. Dudin showed a beautifully soft print in platinum of Temple Bar, and others of Shanklin Chine, Portsmouth Harbour, and Trent Park; there was also a view of a picturesque country road, entitled "When Autumn Leaves are Falling." Mr. Pinkney showed a fine moonlight effect which attracted considerable attention. Two professional members of the Club, Messrs. Fellows and Lodge, showed a considerable number of frames, containing some very good work; the latter showed some very nice prints by his wife, Mrs. Alice Lodge. Mr. H. V. Clements sent for exhibition a number of stereo prints which were taken in 1864 and 1872, and were in a splendid state of preservation, there being very little fading. Mr. A. J. Ransome's enlargement, "Winter," was a fine study, and Mr. W. Street's view of "The Glen, Chudleigh," and his snow scenes were charming. There was a fine enlargement by Dr. Cresswell, a view of "Digswell Mill Pond," which made a nice picture and was well treated; he also showed "A Study of Cattle," on Fry's new "Naturalistic" paper, the effect of which was very good. Mrs. Bowles sent a fine enlargement from a negative, of two swans, and very good view of the interior of the drawing-room at Okeover. Amongst other good views were a good interior by Mr. Dudin; "Stepping Stones," "Skiddaw from Derwentwater," and "A Breaking Wave," by Mr. H. T. Knight. Dr. Cresswell and Mr. Knight also showed some fine lantern slides.

The time of the exhibition was divided into two portions, from 3 to 6 p.m., and from 7.30 to 10, and a lantern slide exhibition was given on each occasion, and vocal and instrumental music performed at intervals. The exhibition was altogether a great success, large numbers of the general public paying it a visit during the course of the day.

## Reviews.

*Bibliotheca Polytechnica*: A Directory of Technical Literature; a Classified Catalogue of all Books, Annuals, and Journals published in England, America, France, and Germany. Edited by Fritz von Szezepanski. (Sampson Low, Marston, Searle, and Rivington, Fetter Lane, E.C. Price, 2s.)

We have here what should be one of the most valuable handbooks to any journalist, scientist, or general reader, viz., a catalogue of the works published during the year on every conceivable subject, in English, French, and German. Turning to "Photographie, Photographie, Photography," we find a complete list of serial publications and books published during the year,



which would be of great value if the correct subscription price were given, which is not always the case, as we find the AMATEUR PHOTOGRAPHER priced at 18s. The volume, only eighty pages, sent for review is that for the year 1889. A work of this character, to be of any value, should be published as soon as possible after the close of the year. The titles of subjects are given in the three languages mentioned above, but the sub-headings are in German only. Thus we turn to "Railways," and find "See Eisenbahnwesen, Chemins de Fer, Railways," but the sub-headings are "Befähigungsnachweis," "Eisenbahnrecht," "Statistik," "Strassenbahnen," "Tarifwesen." The French and English terms should obviously be also given. As we have already stated, the work if brought out to date with the corrections suggested, would prove of immense value.

*Fotografisk Tidskrifts Arsbok*, 1890. Edited by Albin Roosval.  
Published by R. Blaedel and Co., Stockholm.

This annual, embellished by three fine collotypes and several process blocks, comes to hand and contains some useful and instructive articles and tables, and a very good retrospect of the advances in science and apparatus made during the past year.

*Ausführliches Handbuch der Photographie*, by Dr. J. M. Eder.  
Published by Wilhelm Knapp, Halle-a-S., in fortnightly parts, at 1s. each.

We have received Parts I.—VIII. of this stupendous work, and congratulate both author and publisher on the completeness and style with which the work is to be published. Parts I.—III. contain the most complete history of photo-chemistry and photography yet compiled. The author traces the records of the action of light from Aristotle 4 B.C. to Daguerre in 1839. Parts IV. and VI. deal with the action of the solar spectrum and dyes on the silver salts, photography and meteorology, and celestial photography. Parts VII. and VIII. contain the photometry of the chemically active rays, etc., and photography by artificial light. It is a matter of great regret that no English translation of such an indispensable and authoritative work is being published, as the information is of the most complete and recent kind.

*Photographers' Diary and Desk-Book*. (Camera Office.)

We have before us the number for the current year, which is as full of useful information as ever. There are formulæ for all the various methods of printing and developing, and notes upon various new apparatus. There are three days on a page, and they are interleaved with blotting paper, and, generally speaking, the diary will prove a most useful addition to the photographer's desk.



## Apparatus.

### "PRESTO" HAND-CAMERA.

MR. A. FRANKS, of Manchester, Southport, and Hull, has sent us one of his "Presto" hand-cameras, which is a marvel of ingenuity. The camera, quarter-plate size, is well made of ebonised wood, and fitted with a periscope lens, which gives good definition and a perfect field; a shutter of most ingenious and simple construction, admitting of either time or instantaneous exposures, is fitted to the camera. A dark slide is sold with the camera, which is well made and light-tight. Each "Presto" is sent out with half a dozen extra rapid plates, developing and fixing solutions. The whole is packed in a neat case and sold complete for 10s. 6d. It is not a toy, but a thoroughly efficient apparatus, and will have an enormous sale, bringing photography practically within the reach of all. Extra dark-slides are supplied at 2s. each. The camera will be on view at our offices next Monday afternoon, and subscribers or others are at liberty to inspect it.

### CHEAP OPTICAL LANTERN.

MESSRS. PRICE, TALBOT, AND Co., of Ludgate Hill, have sent us one of their 40s. lanterns, which they are offering for a short time at the reduced price of 27s. The lantern body is strongly made and japanned, and the three-wick lamp is made of Russian iron. There are excellent 4 inch compound condensers, and the objective consists of a good quarter-plate French portrait combination, giving good definition on a 9 ft. disc. There is a rack and spindle adjustment to the lens. Optical lanterns can be got

at very low prices now a-days, but the one before us is certainly one of the best made and cheapest at the price that we have seen. It is also admirably adapted for enlarging purposes. Visitors may see it at our offices on Monday afternoon.



## Notes from the Edinburgh Centre.

(By our District Editor.)

MR. GAMBIER BOLTON, F.Z.S., London, the famous animal photographer, gave a lecture in Queen Street Hall, Edinburgh, on Wednesday night, under the auspices of the Edinburgh Photographic Society, whose first popular night it was this season. A large assemblage turned out to hear Mr. Bolton, whose subject was "Animals and Birds Photographed from Life and Described." Mr. Bolton showed, in illustration of his subject, over a hundred slides which, he said, had been exhibited before Her Majesty the Queen, the Royal Society of London, and other kindred societies. The photographing of animals he described as the most difficult branch of the art of photography, and very few people devoted themselves to that special study. He gave a number of instances of the difficulties which the bird or animal photographer had to encounter, and then referred to the many advantages which the scientist and the artist derived from such photographs. The lecture was a treat.

The third annual meeting of the Leith Amateur Photographic Association was held in the Hall of the Association in Duke Street, on the evening of Tuesday, January 27th. There was a large attendance, over which Mr. W. Dougall presided. Mr. A. D. Guthrie, the Secretary, read the annual report. It stated that the Council had the feeling that the Association had maintained its position during the past season, as being of interest as well as instructive to its members, and had therefore continued to justify its existence. Since the last report was submitted, the aim of the Council had been, as far as possible, to keep the members of the Association fully informed of any new departure in any of the branches of the photographic art, by means of papers and illustrations. During the year just ended six new members had joined the Association, and four members had tendered their resignations, so that the membership at present stood at forty ordinary members and one honorary. After detailing the papers and communications brought before the members, the report stated—the Association had given two popular evenings during the session, the first being the usual exhibition of lantern slides, the work of members, held in Junction Street Hall, in February, at which 182 slides were shown, and the second held in Kinnaird's Hall, in October, when the "White Mountains of New Hampshire" set of slides, the work of the members of the Boston (U.S.A.) Camera Club, were shown, both meetings being highly successful. The Association had held no outdoor meeting during the session; the attendance at these meetings latterly being so small it was decided that for the time being they should be discontinued. A dark-room lamp and the necessary measures and trays, for the successful carrying on of demonstrations, had been purchased during the year by the Association. The Council, in carrying out their efforts for the prosperity of the Association, hoped to have the continued sympathy and assistance of all the members, and so make the season upon which the Association was now entering as successful as previous ones. The Treasurer intimated a cash balance of £5 16s. standing to the credit of the Association. The following office-bearers were elected for the ensuing year:—President, Mr. W. Dougall; Vice-President, T. W. Dewar; Treasurer, John Pourie; Secretary, Alexander Pitkethly; Committee, William Smith, F. G. L. Lorimer, R. C. Ewart, R. Hunter, Dr. M'Creadie, James Chapman, William Swanston, M. Campbell, and T. Wilson. On the motion of the President, a very hearty vote of thanks was passed to Mr. Guthrie for his invaluable services to the Association as Honorary Secretary from its commencement. At the close of the business, Mr. Smith exhibited on the screen a number of views, the property of Mr. C. Reid, Wishaw. Mr. Reid has been a particularly keen student of animal life, and among his eighty-four slides which passed through the lantern were some exceptionally fine pictures. At the close, the meeting, on the motion of the President, awarded Mr. Smith a vote of thanks for obtaining and exhibiting such a very interesting series of views. It was arranged to hold a popular meeting in Junction Street Hall on the 24th of February. During the



past session two of the members have obtained prizes for their work, viz., Mr. A. Pitkethly, who gained a Silver Medal and a guinea for a series of six views of the Forth Bridge in an AMATEUR PHOTOGRAPHER competition; and Mr. A. D. Guthrie, who received the third prize of £15 in the "Travelling Studentship Competition," for six landscapes with figures, also in connection with the AMATEUR PHOTOGRAPHER, the first prize of £30 in which went to New York, and the second of £20 to Vienna. Mr. Guthrie has also just received the fourth prize in a lantern-slide competition for a series of six instantaneous views.



## Notes from the Liverpool Centre.

(By our District Editor.)

PROGRESS with our exhibition matters proceeds apace, and in more than encouraging fashion. Altogether the show is likely to prove a very extensive and very model one. Many people have been under the impression that the very stringent conditions imposed on workers in all but four classes, "that the exhibitor should be the author of the entire production," would prevent a large number of gentlemen coming forward and competing. This pessimistic view has been completely falsified. At the time of writing, the entries for the exhibition considerably exceed those of the 1888 show, and the list of really good men is also larger. As I have mentioned before, the Continental men and other workers farther afield, have responded most heartily. The lantern demonstrations will be a pronounced feature, the list of demonstrators including the more noted experts in this special line. Among the names I find those of Messrs. Paul Lange, who will open the series with his "Iceland," giving the lecture for the first time publicly; William Tomkinson, "Normandy;" Gambier Bolton, "Animals;" A. R. Dresser, "Celebrated Snap-Shots;" Charles W. Hastings, "AMATEUR PHOTOGRAPHER 1890 Prize Slides" and "Recent Photography;" and J. W. Wade, L. Howie, S. G. Harrison-Dearle, J. P. Gibson, George E. Thompson, Walter D. Welford, W. Brookes, E. M. Tunstall, etc., etc., will contribute.

At the monthly meeting of the Liverpool Society, held last Thursday, 29th ult., there was a crowded attendance. Seven new members were added, bringing the strength of the Society up to 283. A pleasant time was passed with Mr. F. Anyon's exhibit and lantern entertainment, the "business" portion of the evening being largely devoted to an important expression of opinion concerning "Amateur" work. Rule 2, as amended, will read:—

### DEFINITION OF "AMATEUR."

"This Association shall consist exclusively of amateur photographers, and the term 'Amateur' as here used shall be understood to apply to any person who, while pursuing the subject of photography as a recreation, or in the interests of science, does not make the practice of the art a means of livelihood, or a necessary part or definite source of income."

It is felt up here that this definition should be an accepted and final settlement of the somewhat knotty and difficult amateur question. Certainly, the amended rule is the outcome of long and careful thought on the part of Mr. P. H. Phillips, a former President, and one of the oldest and best respected members of the Liverpool Amateur Photographic Association. This said, it is needless to go further into the amended rule, being the candid expression of a gentleman fortified by long experience and "backed" by an enviable reputation. The Liverpool Society can claim also that they have been pioneers in clearing away much that has circumscribed the sometimes much abused and totally misunderstood and misconstrued "amateur photographer."

Following Mr. Crowe's practical demonstration on "Spotting of Prints and Blocking-out of Skies in Negatives, Silver and Platinotype, etc.," next Wednesday Mr. E. M. Tunstall has arranged for Dr. Jumeaux, of the Manchester Amateur Photographic Society, to come to the Liverpool rooms at the February ordinary meeting on the 26th, to give a paper and demonstration on "Eikonogen v. Pyro as a Developer."

Great satisfaction is expressed with the capital reproduction of one of Mr. Paul Lange's hoar-frost scenes, which appears in the current issue of *The Art Journal* as one of the illustrations to an article on "Recent Photography" from the pen of Mr. Charles W. Hastings, who is so well known as the Editor of the AMATEUR PHOTOGRAPHER and other photographic publications.

## Societies' Meetings.

**Bat's.**—A meeting was held on the 28th ult., Mr. W. Pumphrey (the President) in the chair. Miss Melita Bird and Mr. Cecil Bradshaw, Mr. Ernest Lambert, Mr. Graystone Bird, and Mr. C. W. Dykes were elected members of the society. The Chairman drew attention to the pamphlet sent them by Dr. Emerson, which appeared to be a recantation of the views expressed in his work, "East Anglian Life." Portions of the pamphlet were read, and the Chairman said the recantation added tenfold value to the book itself. Mr. J. Dugdale then showed the improved form of lantern scope he has recently devised for the purpose of viewing lantern-slides. The Secretary showed a telescopic sliding metal tripod, sent by Mr. Pumphrey, of Birmingham. The Chairman then followed up his demonstration of enlarging processes. In this instance a very simple apparatus was used—a dark chamber, in an aperture of which the negative to be enlarged was placed—in front of that an expanding camera minus the focussing and dark-slide, and in front and movable in three directions an easel to carry the sensitive paper. A paraffin lamp, placed within the chamber, was used for focussing the enlarged image on the easel, after which it was removed to a tin lantern with a red glass front. A piece of oiled ground-glass was next placed before the negative to act as a diffuser, the sensitive paper adjusted on the easel and the exposure made. This was done by means of magnesium ribbon; a string of ribbon six inches long and held by pliers was ignited at a spirit flame inside the chamber, and passed during combustion from side to side and up and down in front of the ground glass screen, this process being repeated as often as required. To produce a fully impressed enlarged positive on bromide paper, say from a dense half-plate negative, the enlargement being about three times lens, working at  $f/12$ , three such pieces of ribbon would be required. If a negative possesses great density in parts the plan of illuminating offers distinct facilities for adapting the light to suit it. Mr. Pumphrey stated that this method was introduced by Mr. Monkhouse, York, and that it was by his special permission he brought it before the society. The exposed paper was developed, and the result handed round. An exhibition of lantern transparencies then took place. First there was a competition for the best set of slides, the work of the competing members, and also of the best individual slide. Mr. H. G. P. Wells secured the highest number of votes for his series. For the best individual slide the award was given to Mr. Ernest Peacock, for a view at Uplyme. The remainder of the evening was devoted to an exhibition of non-competing slides, contributed by the Chairman, Messrs. Grisow, Wells, Powell, Dugdale, Shackell, and others.

**Birmingham.**—The ordinary meeting of the above society was held on the 29th ult., Mr. W. J. Harrison, F.G.S., in the chair. Eight new members were elected. The evening was devoted to a developing competition and demonstration. Plates were exposed in the room behind negatives, and then developed with the developer and by the member whose name follows it:—Pyro and ammonia, by Mr. J. T. Mousley; pyro and potash, by Mr. J. Simkin; hydroquinone, by Mr. G. A. Thomson; eikonogen, by Mr. A. J. Leeson; "demon," by Mr. J. H. Pickard; ferrous oxalate, by Mr. W. J. Harrison. The question-box contained the following: "How are photo-etchings produced?" Mr. Jeome Harrison said that he was not aware of the details of this "photo-etching" process, but that in principle he believed it to consist in imposing a carbon print upon a grained metal plate. A solution of perchloride of iron was then poured over the carbon picture, and this solution acted through the carbon image, biting or etching the metal beneath it. The metal plate could then be used to print from.

**Brighton.**—Lantern evening, January 27th. The slides sent in to the AMATEUR PHOTOGRAPHER Competition were shown to a large audience.

**Bolton.**—The fortnightly meeting was held on the 28th ult. The President, Mr. J. Johnston, M.D., gave a very interesting and graphic description of his recent voyage and visit to America, illustrating the same by some splendid slides and prints which he had taken. At a previous meeting Dr. Mackenzie, the Vice-President, gave a lantern illustration of his recent "Three Weeks' Tour with the Camera in Scotland." Both meetings were well attended.

**Cardiff.**—Through the courtesy of the Boston Camera Club, the executive of the above Society were enabled on the 30th ult. to place before a Cardiff audience the second series of American slides. An imaginary trip was taken through that section of Northern New Hampshire which is called the "Crown of New England."

**Croydon.**—The first annual meeting was held on the 2nd inst., the President, Mr. H. Maclean, F.G.S., occupying the chair. The report, which was of an unusually gratifying character, stated that no less than seventy gentlemen had been elected since the Society was founded on February 25th, 1890. The accounts showed a balance in favour of the Society of £16 15s. 4d. During the year twenty evening meetings had been held for the consideration of special subjects; weekly conversational meetings had been arranged for since July last.



A number of successful photographic rambles were held in the summer. The club rooms are central, and are fitted with most things necessary for ordinary photographic operations, more especially for dark-room work. The rooms are open every week-day to members from 10 a.m. to 10.45 p.m. The following officers were chosen to serve for the ensuing year:—President, H. Maclean, F.G.S.; Vice-President, Dr. Strong, J.P.; Treasurer, A. E. Sargeant; Hon. Sec., G. R. White; Hon. Assist. Sec., E. F. Blow.

**Dukinfield.**—The monthly meeting of members was held on the 26th ult., when the night was devoted to general conversation and the best means of promoting the exhibition to be held on the 13th and 14th of February next. A special meeting was held on the 30th ult. in the Board room of the Co-operative Hall, when the AMATEUR PHOTOGRAPHER 1890 Prize Lantern Slides were exhibited. The slides were each received with well merited applause. The annual exhibition of prints, slides, etc., will be held on Friday and Saturday, the 13th and 14th inst.

**East Southsea.**—The first annual smoking concert in connection with this Society was held on the 26th ult. An excellent display was made at one end of the room, where a large number of photographs, lantern slides, etc., all the work of members, were artistically arranged. A capital programme was gone through.

**Harlesden and Willesden.**—A meeting of this Society was held on the 27th ult., Mr. J. Naylor (the President) in the chair. After the transaction of the preliminary business Mr. Seed was called upon for the second part of his paper on "Elementary Rules of Art Applied to Photography." Mr. Seed illustrated his lecture by numerous photographs, etchings, and cuttings from art journals, besides many diagrams of his own work; and his explanations of etchings by Landseer and other artists, especially some descriptive of Burns' "Cotter's Saturday Night," were masterly and exhaustive, and showed his wonderful grasp of the subject. The Hon. Secretary (Mr. Cohen, 26, Wendover Road, Harlesden), requests us to state he would like to know of any intending members, so that the Society may arrange its syllabus for the coming season. The subscription is only nominal. On Tuesday, February 10th, Mr. Clapton will read a paper on "Lenses."

**Holborn.**—Friday, the 30th ult., was lantern night. Slides by Messrs. Chang, Golding, and Miller, including views of Henley Regatta, Ascot Races, Orpington May Day Festival, Oxford and Cambridge Boat Race, Ilfracombe, Ramsgate, Margate, etc., were shown to an appreciative audience of members and friends.

**Lewes.**—A highly interesting exhibition of photographs, photographic apparatus, transparencies, lantern slides, &c., was arranged by the Lewes Photographic Society and held at the St. Anne's Concert Hall on the 28th ult. In addition to the exhibition of work, which was nearly all by members of the society, there were two lantern entertainments, at which some vocal and instrumental music was also rendered. Unfortunately, the weather was very unpropitious, and the attendance was not so large as had been anticipated. The Mayor, who was accompanied by the Mayoress, opened the exhibition. The lantern entertainments were much appreciated, and when a slide of exceptional merit was shown a hearty round of applause was given. The principal feature of this part of the entertainment was the exhibition of the prize slides lent by the Editor of the AMATEUR PHOTOGRAPHER, which were greatly admired. If the palm is to be given to any particular class, it should undoubtedly be awarded to the architectural subjects, which were exceptionally fine. Some of the most striking subjects thrown on the screen were Caen Cathedral; South Door, Lincoln Cathedral; West Front, Rouen Cathedral; South Porch, The Choir, and other parts of Gloucester Cathedral; South Transept, Lincoln Cathedral; South Front, Lady Chapel, and Choir, York Minster; East Front, Entrance Hall, Veranda and Library at Eaton Hall; The Choir, Manchester Cathedral; Haddon Hall; Steps, Mont St. Michael; Kilkenny Castle; Yachting in Morecambe Bay; and A Stormy Sunset. During the evening a series of instrumental pieces and songs were given.

**Leith.**—The annual general meeting of this association was held on January 27th, Mr. William Dougall, President, in the chair. The Secretary's report showed the association to be in a satisfactory condition, the membership standing at 40, and notwithstanding the fact that two popular meetings had been given during the year, and various apparatus purchased for demonstration purposes, they had a balance of £5 16s. on hand. During the evening a series of 84 transparencies of "Animal Studies" from negatives by Mr. Charles Reid, Wishaw, were passed through the lantern.

**Luton.**—A most enjoyable evening was spent on the 2nd inst., when the prints contributed to the No 16 AMATEUR PHOTOGRAPHER Monthly Competition were examined and discussed. The Photographic Institute proposals were brought forward for discussion, but owing to the limited time, no decision was arrived at. Six new members were elected.

**Liverpool.**—The first ordinary meeting of the twenty-eighth session was held on the 29th ult. The President (Mr. Paul Lange) occupied the chair. The following were elected members of the Associa-

tion, viz.:—Norman Crook, A. C. Batty, Theodore Hubback, Miss Adams, F. W. Walker, E. C. Sole, and F. H. Elsy. A vote of thanks was accorded to the retiring officers of the Association, and the President then distributed to the successful competitors the medals awarded in the prize competition of last November. The meeting then resolved into a special meeting to consider certain alterations in the rules of the Association, at the close of which Mr. F. Anyon gave an exhibition of a new lantern, with which he showed a series of very fine slides, some of them of exceptionally high merit.

**North Middlesex.**—The last meeting was held on the 26th ult., Mr. W. T. Goodhew in the chair. Mr. G. R. Martin opened a discussion upon "Halation and Light Fog." He said halation was a spreading of the high lights into the adjacent shadows, and were assumed to proceed from reflections from the back of the plate. Another cause might be reflection from the crystals of haloid salts in the film. This would be small in quantity, and entirely on the surface of the film, and could be removed by gently rubbing with soft rag saturated with methylated spirit. A cause of fog was light reflected from the edges of badly finished lenses. A cause of halation, not usually considered, was to be found in the motes of dust in interiors, which would cause brilliant light to be dispersed, and form fog upon the plate. He then proceeded to give some instruction as to prevention and cure, which were listened to with much attention. An animated discussion followed, in which many members took part.

**Putney.**—At the meeting held on the 31st ult., the Rev. L. Macdonia in the chair, Mr. Howse, of the Britannia Works Company, gave a demonstration on the new Ilford special lantern plate. He exposed three plates, two to ordinary gaslight giving 15 to 25 secs. exposure, and one to the light of a wax vesta. Upon development it was impossible to distinguish one from another. The Secretary announced that he had received six dozen lantern plates and developers from Messrs. Edwards and Co., The Grove, Hackney.

**Sunderland.**—The monthly meeting of this society held on the 28th ult. was largely attended. The chief feature was a paper on "Lantern Slide Making," which was read by Mr. Edgar G. Lee, of Newcastle. After a most interesting explanation of his manner of working, Mr. Lee gave a demonstration of his method of developing, using hydroquinone. Upwards of 100 very fine slides by Mr. Lee and other exhibitors of renown were shown on the screen by the limelight lantern.

**Tunbridge Wells.**—There was a public exhibition of lantern slides on the 27th ult., shown by Mr. Cornell in the Sussex Assembly Rooms. The series of views was entitled "The Stately Homes of England," and included Windsor Castle, from the Thames and east front, with views of the corridor and green drawing-room in the interior; Hampton Court Palace, Lambeth Palace, Cobham Hall, Eastgate House, Rochester; Hurstmonceux Castle, Arundel Castle, Hatfield House, Charlecote House, Warwick Castle, from the bridge and courtyard, with an interior view of the famous cedar drawing-room; Guy's Cliff, Stoneleigh Abbey, Newstead Abbey, with views of the mediæval dining hall and the drawing-room, and also of Lord Byron's bedroom, which is kept as nearly as possible in the same state as in the days of the ownership of the poet; Welbeck Abbey, the Duke of Portland's seat, of which views of the Gothic hall, chapel, and great riding school were shown; Clumber House, Thoresby House, Chatsworth, the Duke of Devonshire's seat, shown from the bridge and garden, a peep at its priceless art treasures being also obtained by some fine views of the sculpture gallery; Hardwick Hall, with its magnificent entrance hall and picture gallery, and Queen Mary's bedroom, still preserved as the beautiful but unfortunate Queen of Scots occupied it; Haddon Hall, with its old banquet hall and ball room; Leahurst, Fountains Hall, Hawarden Castle, Eaton Hall, Alnwick Castle, Bamborough Castle, and Naworth Castle. Other views of the Medway, etc., were also shown, and there was a musical and dramatic entertainment.

**Tooting.**—The ordinary meeting was held on the 27th ult., the President in the chair. The evening was devoted to lantern-slide making by Mr. J. F. Child. The next ordinary meeting will be held on the 24th February, when Mr. Berger will demonstrate pyro development.

**Yorkshire College.**—A lantern exhibition, under the auspices of this Society, was held on the 29th ult., in the Chemical Lecture Theatre at the College. Dr. Jacob presided. A large number of slides prepared by Dr. Jacob, Miss Ethel Ramsden, and Mr. C. H. Bothamley were shown. Amongst these, the most interesting were several of Norwegian scenery, taken by Dr. Jacob; and a series of views in the Valley of the Wye, for which Mr. Bothamley was responsible. For the most part the photographs were of a high order of excellence. The exhibition altogether was a success, and the only cause for regret was that more members of the Society did not show samples of their work. Dr. Jacob explained at the outset that this was due to several unavoidable circumstances.

**Woolwich.**—On the 29th ult., Mr. Burnham, B.Sc., resumed his lecture on "Photographic Chemistry." The next meeting will be on the 12th inst.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4478. **Photographs of Different Styles of Window-Dressing.**—Are they to be obtained anywhere?—**J. H. MITCHELL.**
4479. **Watch Cameras.**—Can anyone inform me from experience whether Lancaster's Watch cameras are reliable instruments or not?—**SCRIPTOR.**
4480. **Eastman's Transparent Films.**—Will some one kindly tell me how to develop five or six exposures of the above film at a time, in one dish?—**DRAF AND DUMB.**
4481. **Carbutt's Plates.**—Will someone kindly give me the best formula for developing Carbutt's American plates with pyrogallol?—**DRAF AND DUMB.**
4482. **Copying Drawings.**—I should be obliged for directions in the following case:—The drawing is a pencil one, rather faint. What plate should I use, what stop, what exposure? My camera is half-plate. I have both slow and rapid lens; which is best? I presume hydroquinone would be best developer. I always use Ilford ordinary, as a rule.—**T. A. M.**
4483. **Rough Paper.**—I want a very rough surface printing paper, bromide, or plain salted for large work. Is such a paper made commercially?—**LIZZIE.**
4484. **Celluloid Films.**—Can any reader tell me of a really reliable make, rapidity not so much an object as a perfect film? Shall require a large quantity for a tour, and do not wish to be disappointed on my return.—**LIZZIE.**
4485. **Fixing and Toning Bath.**—Will the following fixing and toning bath keep indefinitely:—  
Tungstate soda ... 60 gr.  
Sulphocyanide ammonium ... 100 "  
Hypo sulphite soda, in 6 oz. water ... 980 "  
When dissolved, add 6 gr. chloride gold.—**INITIUM.**
4486. **Instantaneous Photographs.**—Can instantaneous photographs be got by a single lens?—**INITIUM.**
4487. **Sodium Hyposulphite.**—What weight of sodium hyposulphite will 1 oz. of cold water dissolve?—**INITIUM.**
4488. **Films.**—Will someone kindly advise me as to the best and simplest film to use in a roller-slide, and where obtainable, also if made in spools to suit ordinary roller-slides? The film would be required for detective work.—**A. E. S.**
4489. **Fixed Focus Lens.**—Will any brother amateur tell me where to buy a good fixed focus lens for quarter hand-camera?—**T. A. T.**
4490. **Reversal.**—In taking a gentleman and lady side by side, the order was reversed (from left to right) in the print. How can I avoid it in the future?—**E. T. E.**
4491. **Celerotype Prints, Loss of Tone in.**—I obtained a beautiful warm tone on some Celerotype prints with the borax bath, which disappeared immediately in hypo, and never returned; also the prints curled up in hypo, which I have never had occur before. Will someone kindly tell me how I may avoid the above?—**E. T. E.**
4492. **Snap-Shot.**—Will somebody please tell me if I can take a snap-shot with a hand-camera, at a moving object, from a carriage which is in motion?—**H. I. C.**
4493. **Platinotype.**—Can any body tell me why my platinotype prints are not sharp, although silver

prints taken from the same negatives are sharp and clear?—**H. I. C.**

4494. **Shutter.**—I am in want of a good, cheap, and efficient instantaneous (not time and instantaneous) shutter. Can any brother amateur recommend me a good one? Must have pneumatic release, so as not to touch the shutter. Can a Dewey's shutter, the Gem, be well recommended for instantaneous work? Is it strong, well-made, and effective? With thanks in anticipation.—**NIEPCE.**

4495. **Hand-Camera.**—Can any reader of the **AMATEUR PHOTOGRAPHER** tell me if it would be possible to convert Lancaster's Mervilleux into a hand-camera by making a box to take it, using a half-plate Lancaster's instantaneous lens and shutter, on a quarter-plate camera? If not, any description of how to make a cheap but good light-tight, serviceable hand-camera will oblige. Please do not refer me to any books or papers.—**NIEPCE.**

4496. **South Africa.**—I am going to South Africa at the end of March, and intend taking my cameras with me. Would any reader inform me what sort of developer would suit, also plates, paper, lens, etc.? Could they also inform me whether there is any accommodation on board (Donal'd Currie's line) for photographers?—**NEMO.**

4497. **Machine for Enlarging Drawings.**—A few years ago an apparatus was devised for enlarging drawings, etc., from a facsimile on a rubber or elastic surface, which material was capable of expanding or contracting uniformly in every direction. Will some reader give name and particulars of the apparatus, and say if it is used in England?—**ISTRIEL.**

## QUERIES UNANSWERED.

Jan. 16th.—Nos. 4447, 4449, 4453, 4455, 4456, 4457, 4459.  
Jan. 23rd.—No. 4463.  
Jan. 30th.—No. 4471.

## ANSWERS.

4444. **Enlargement Retouching.**—Chinese white and Indian ink will be found very suitable. The Indian ink may be made to match the tone of the print with a little lake.—**THE SMITH.**
4445. **Enlarged Negatives.**—Ordinary plates will do, but I can speak confidently of Thomas's transparency plates. They are cheaper than the majority of good plates, and are very easy to work. The exposure can only be arrived at by experiment.—**THE SMITH.**
4451. **To Mount Eastman Transparent Film for Enlargements.**—Place the negative film between two pieces of thin glass, free from flaws, and bind with lantern strips.—**THE SMITH.**
4460. **Speed of Shutter.**—Let  $a$  = length of aperture in the slide,  $b$  = diameter of shutter aperture, and  $c$  = vertical distance between  $a$  and  $b$  when shutter is set. Then  $\{(\sqrt{a^2 + b^2 + c^2}) - (\sqrt{c^2})\} \cdot 072$  = exposure in seconds. Thus, let  $a = 1\frac{1}{2}$  in.,  $b = 1$  in., and the distance between  $a$  and  $b$  in.  
Then  $\{(\sqrt{1\frac{1}{2}^2 + 1^2 + 5^2}) - (\sqrt{5^2})\} \cdot 072$   
=  $(1.73 - .7) \cdot 072$   
=  $(1.03 + .072) = .072$  sec., or about  $\frac{1}{10}$  sec.—**THE SMITH.**
4465. **Camera Bellows.**—See "Journal Almanac," 1891, page 522.—**THE SMITH.**
4467. **Toning Bromide Paper.**—The Fry Manufacturing Co. are sending out instructions for toning their paper. I have lately been trying their method, and have produced some nice results. Should advise "Neil Read" to send for particulars, or call and see their specimens.—**PADDY.**
4467. **Toning Bromide Paper.**—Bromide papers can be toned. Slightly over-expose the prints, and, after developing, tone in a bath composed as follows:—  
No. 1.  
Water ... 18 oz.  
Acetate of soda ... 4 drm.  
Chloride of gold ...  $\frac{1}{2}$  gr.  
No. 2.  
Water ... 18 oz.  
Ammonium sulphocyanide ... 2½ drm.  
Chloride of gold ...  $\frac{1}{2}$  gr.  
For use, mix 10 parts No. 1 with 3 parts of No. 2. After toning, wash the prints very thoroughly.—**HAMISH.**
4468. **Enlarging by Artificial Light.**—I am afraid an ordinary lamp is not sufficiently powerful to enable you to enlarge successfully. In the "Dictionary of Photography" a Belge lamp is recommended, one of 42-candle power, with an opal globe to diffuse the light.—**HAMISH.**
4469. **Hand-Camera for a Lady.**—I can highly recommend the Luzo camera, made by Robinson, 172, Regent Street. It is small and light, and cost me, including a black leather case, and ready charged with 100 films, £4 14s. 6d.—**H. I. C.**
4469. **Hand-Camera for a Lady.**—A "Lady Amateur" should buy either one of Fallowfield's Facile's or the Eastman Co.'s Kodak hand-cameras. They are both first-class cameras, and I think a "Lady Amateur" is wise in giving the price she mentions, viz., £5, instead of going in for a cheaper article.

She will find that she will be able to take pretty successful pictures with a camera at this price, whereas, with a cheaper one, she will very often take very indifferent ones, and this only leads to discouragement.—**HAMISH.**

4470. **Bromide Prints.**—You do not say when the bubbles appeared. Was it in developing or fixing? Unless your negative was fairly dense, 15 seconds would be far too much exposure. If you care to send me the prints I shall be pleased to report upon them. **PADDY** (address with Editor).

4472. **Paget Prize Plates.**—As far as I am aware, the manufacturers do not give a hydroquinone developer for their plates, but no doubt you will find the one given by the Britannia Works Co. for their plates suitable for the Paget plates. It is worth your while, at least, to try it.—**HAMISH.**

4473. **Aristotype.**—It is always advisable, when mixing up any formula, to do so in the order given. The colour of the toning and fixing bath, after it is mixed, is brown. After toning each batch of prints the solution should be filtered, and gold added from time to time. Silver-paper scraps from ordinary paper will do. I think you would get almost as good results by using one of the ordinary toning baths for silver paper; at least, I have found it so with Celerotype paper, which I have been using lately.—**HAMISH.**

4474. **Spotting.**—Before burnishing; colours, Indian ink and light red, or rose madder. Mix up with little gum water to imitate tone of print. To make the colour take on albumenised surface, wet with tip of tongue. Great care is needed.—**DERWEN DHU.**

4475. **Mounting Aristotype Paper.**—  
Pure India rubber ... 40 gr.  
Benzole ... 4 oz.  
Dissolve. Apply this solution to edges of prints only with camel's-hair brush, and transfer them carefully to mounts. Care must be taken when mounting to place print in its right position at once, as it cannot well be moved when once in contact with mount.—**DERWEN DHU.**

4475. **Mounting Aristotype Paper.**—I believe the best mount obtainable in the market is the Celerotype mount, sold in 6d. and 1s. bottles. You can coat the backing paper right over the face, not the edges only, and place on print while it is on the glass. When the print is dry, you can then mount it in the usual way.—**HAMISH.**

4476. **Making a Camera.**—If "H. L. N." will send me his address through you, I will send him measurements, and small drawing on how to make a camera.—**J. ROBERTSHAW.**

4477. **Views on the Rhine.**—"Kendal" may be able to get these from D. R. Duncan, 186, Fleet Street, or Spooner and Co., 379, Strand.—**HAMISH.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S POST if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT.**

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**ARMY SERGEANT.**—"Photography for all" (Harrison), "Modern Dry Plate Photography" (Burton), both useful books. If you can afford it go in for a half-plate kit with an R.R. lens.

**E. G. LEE.**—Many thanks for particulars; sorry we did not receive a few days earlier in order to have included them in our notes on the competition in the *Reporter*.

**A. L. SPILLER.**—MS. received; may use it later on. **ETHELRED DILLON.**—Letter to hand. We sent off the entry form, but will add particulars to your picture.

**F. W. LEVETT.**—Another time, perhaps, you will be able to arrange matters.

**PATRICK M. MACHAON.**—Thank you for correcting us. The matter is, as you say, interesting as regards the copyright question only.

**A. E. VENK.**—We want to send you letter. Kindly let us have your present address.

**HYDROGEN.**—Incomplete combustion.

**G. MCINTOSH.**—Give us a call any Monday afternoon, or could see you by appointment on a Thursday. Cannot decipher address, so could not write to you.

**TE WIRIRIMU.**—There is no work in English, French, or German on the subject you name. We shall be pleased, however, to give you some hints if you can call any Monday afternoon between 2 and 5 p.m. Photography should be of great assistance to you in that special study, but it would entail a great deal of personal work of a rather laborious and "zeitsubend" character. If you cannot call we will write you.

**E. W. MALE.**—Mat silver prints give very fine artistic results prepared as you state. We should advise you to obtain No. 1 of the "AMATEUR PHOTO-



GRAPHER Library," (price 1s., from our publishers) where preparation of the paper is fully treated of.

CANADA.—You had an excess of acid, consequently on the application of heat this was dissipated. The addition of carbonate of soda precipitated carbonate of silver, which was again converted into nitrate on the addition of acid with the formation of nitrate of soda; addition of ammonia precipitated oxide of silver  $\text{Ag}_2\text{O}$ , which is not explosive, and also nitrate of ammonia; the addition of nitric acid redissolved the oxide. You must be careful when adding ammonia to nitrate of silver solutions, as had you added it in excess so as to form a clear solution, you might have obtained some fulminating silver which would have frightful results. The crystals you have got are probably a mixture of nitrate of silver and nitrate of ammonia, the mother liquor containing nitrate of soda and some silver. Your best plan will be to reduce to metal and redissolve. The best plan to dissolve silver for photographic purposes is to take one-third of the weight of silver in strong nitric acid, dilute with one-third water, heat and let it dissolve as much as possible, then pour off the solution and repeat the operation till all the silver is dissolved; take one-fifth of the resulting solution, add carbonate of soda till the whole of the silver is precipitated, collect and wash the precipitate, then add the carbonate of silver gradually to the acid solution of nitrate of silver, till there is a slight cloudiness from undissolved carbonate. If the bath is required for sensitising paper it is now in fit condition, or may be evaporated till the strength is right, thus 1 gr. of pure silver will make 1.574 gr. of solid nitrate or 15.74 gr. of 10 per cent. solution. The amount of acid required to dissolve the silver varies according to sp. gr.: Nitric acid of sp. gr. 1.3 will dissolve about its own weight of silver, acid of 1.2 specific gravity will dissolve two-thirds of its weight.

E. L. DELARUE.—A film holder would certainly have been recommended only that you merely wanted a report on the instrument and lens, or rather on the cause of the fog. The development of films is precisely the same as plates now that celluloid is used as support.

A. F. W. F.—Place a micrometer or object of known size on the stage, receive the image on a sheet of ground-glass slipped on to the end of the tube in place of eye piece, focus the image sharply; then measure the distance between the image and object, and measure the size of image. Divide the size of image by the actual size, multiply the result by the distance between the image and object, and divide the result by the quotient obtained by dividing the size of image by size of object + 1, squared. For instance, let D = the distance between image and object, and a = the quotient obtained by dividing image size by actual size,

$$\text{then } F, \text{ the focus} = \frac{a \times D}{(a + 1)^2}$$

Let D = 12 ins., the object measures  $\frac{1}{8}$  in., its image measures  $\frac{1}{16}$  in. then  $a = \frac{\frac{1}{16}}{\frac{1}{8}} = \frac{1}{2} = 20$ .

$$\text{Then } F = \frac{a \times D}{(a + 1)^2} = \frac{20 \times 12}{(20 + 1)^2} = \frac{240}{441} = \frac{1}{2} \text{ in approx.}$$

A. W. BULLEN and J. H. NUNN.—The peculiar appearance of the print forwarded by you was probably due to the precipitation of calcium (lime) and magnesium salts from the hard water by the developer. Some varieties of paper are particularly prone to this appearance which is no defect, and in the cases we have in view, is probably due to a peculiar surface paper and the use of chrome alum in the emulsion. All paper developed by hydroquinone should be well washed to free from developer before being put in an alum bath and then well washed before fixing, and should receive a final dip in a fairly strong clearing bath.

M. WHITEHEAD.—The only objection is that you may possibly get flare spot or ghosts when stopping the lens down for a landscape with brilliantly lit sky. We can trace no signs of any former letter.

F. R. TESTER.—(1) Over-exposed. (2) Over-exposed. (3) Over-exposed. (4) Over-exposed. All the above would have been improved by a shorter exposure and a longer development. (5 and 6) The latter is decidedly the better. Cut your exposures shorter and develop longer. Let us see some more work in a month's time.

W. P. HIGH.—Cut your exposures down and develop longer; thin sky due to over-exposure.

W. T. PHILLIPS.—We shall be very pleased to choose a lens for you and need not exceed the sum named. The fee is 2s. 6d. Let us know the greatest stretch of your camera bellows.

TYRO.—Certainly get the 8 by 5 of 9 in. focus.

H. WATSON.—The negative is a hard one and consequently the prints suffer. No. 2 is the better tone. Use your bath at a temperature of about 80 degs. F. The depth of printing is right.

T. LISLE.—Get some pure oxgall extract from a chemist's, dissolve in the proportion of 1 oz. of extract, methylated spirit 5 oz., water 15 oz., and apply with a brush to print, or mix your colours with it.

CORNWALL.—Lenses to hand. Report to follow.

PLATES.—(1) The "instantaneous" would decidedly do for landscape with moving objects,

and would require the lens to be stopped down in a very bright light. (2) The "instantaneous" are to be preferred for studio work. (3) The same as any ordinary. (4) Impossible to answer such a question as this. (5) The plates work well with hydrokinone and eikonogen.

CHAS. C. MACKLEY (Ueberlingen, Germany).—Laverne and Co., 10, Rue de Mal'è, Paris.

IRENE.—(1) We choose D. (2) No; practically of no use. (3) R will give no better definition than D at f/8.

T. A. LISLE.—The negative would have stood a slightly longer exposure or a little more developing. The result, however, of your work is excellent. We should be pleased to see some more presently.

J. A. VERNEY.—We certainly advise the tripod camera. The hand-camera would be of no use.

E. R. LOGAN.—We should place as follows—3, 1, 5, 6, 2, 4, 7. With square bellows certainly.

G. H. KIRSON.—Willsenden Paper Company, 72, Watling Street, E.C.

A.—These are very good and very convenient. We should prefer c to b or else Dewey's gem shutter, which is cheap and good.

T. B. FULLER.—The peculiar colour is due to the prolonged exposure. You are aware, of course, this is just the colour to tone well in the bath recommended.

BIARRITZ.—Your letter to hand and contents noted with thanks. We hope future questions will not be too stiff for you. Thank you for notes on "Photography in France," which we will use. You have misunderstood No. 7; we do not suggest that an emulsion is a chemical compound, though it may be compounded of chemicals.

HYPO.—The washing certainly should be sufficient, but if you will send us up a print washed as you say, we will test it for you.

BREWER.—The lens is of too long focus for general use in a hand-camera. Sell it if you like and then get a No. 3 Kodak.

WILMOT.—We received no print from you, and are, therefore, unable to answer No. 1. Send the print up and we will then answer. No. 2. Send a list of all the books and we will place in order. No. 3. We recommend a two-fold, though the three-fold would perhaps be more convenient for you to carry, and there is really little to choose between them. No. 4. Cut some strips of stout tinfoil, the required width and paste on to the edges of negative. No. 5. We should certainly recommend the more expensive salt. No. 6. Let us know approx. size of dogs—or breed would be guide enough—and also focus of lens.

H. W. A.—The cause of the stain is certainly the long washing you give. Use your hypo bath double as strong, viz., 20 per cent., then give wash for two hours in running water, and then six changes of water during the next hour.

C. CHURCHILL.—Mr. Wall has abandoned the use of formic acid because of the staining power. Add 1 oz. of sulphurous acid. Use a chrome alum clearing bath.

A. C. KING.—Your MS. duly received. We may use the same in the Reporter.

F. C. BARTON.—Report shall be sent next week.

F. A. EDEN.—Will send criticism upon your albums next week.

HAMISH.—In the following order—3, 1 and 2, and to the other question we would answer B, C, A.

HEMO.—We insert as a query; no doubt some one having had experience in South Africa. Perhaps you would call upon us some Monday afternoon before you go out.

H. D. GOWER.—Letter noted. Will try and devote a little more space to your society in future.

E. SMITH.—Many thanks for letter. Always glad of your kind help.

A. BROAD.—The communication duly received. Hope you will soon muster up courage enough.

W. O. HEMMONS.—We reply to you by post.

## Quarterly Examinations in Photography.

### QUESTIONS.

10. What are the leading factors which regulate the duration of exposure?
11. Is there any difference between wet plate and dry plate development; if so, what?
12. Describe the use and action of a swing-back.

(Latest Day for Answers—February 16th.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
2. All answers must be preceded by the question,

and should be written on one side of the paper only.

3. A *nom de plume* may be used, but in every case the full name and address must also be given.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed to:—

"EXAMINATION DEPARTMENT,"

AMATEUR PHOTOGRAPHER,

1, CREED LANE,  
LONDON, E.C.

## Monthly Competition.

### No. XXI.—ANIMALS AND INSTANTANEOUS.

#### Title of Photograph.

	By Whom Sent.
Fritz	T. K. Fairless.
Outward Bound	Dr. E. W. Alabone.
Midland Railway, near Hampstead	A. L. Spiller.
On the River Lea	G. Freethy.
Sitting for His Portrait	F. James.
The Countenance Open, the Thoughts Concealed	H. E. Lancaster.
A Rural Feast	John Seed.
Expectation	O. Buttanshaw.
s.s. <i>Isanhoe</i> at Corrie, Isle of Man	A. C. Hunter.
Before the Wind	O. H. Davis.
Waiting for His Rider	Miss Dilton.
A Pet	D. Forbes.
A Showery Evening	J. M'Keogh.
Warleggan, Cornwall	Rev. G. E. Hermon.
Going to the Fair	J. White.
Waiting for the Milkmaid	E. C. H. D'Aeth.
Three Jolly Dogs	Mrs. Cleasby.
Lurline	T. Melsaac.
Whiteface	W. Smith.
Harvest Field, Fifehire	W. W. Ritchie.
Jeff	H. P. Holmes.
In Rear of the Column	T. Grievie.
The Danger Unseen	A. W. Gottlieb.
The Morning Bath	Miss H. Annesley.
Dinner Time	R. W. Copeman.
Henley Regatta	C. F. L. Barnwell.
Cattle Fair, Amsleg, Switzerland	Mrs. F. W. Wilson.
There and Back, 3s. 6d.	A. M. Bonn.
Major Wickman's Harriers	Mrs. Benyon.
Feeding a Chicken	W. B. Cassingham.
The Hero of a Hundred Fights	Miss O. M. A. Cresswell.
Sunset at Biarritz	C. D. D. Fothergill.
Entering Dock Barry	A. James.
Friends	T. L. Buck.
170 Stone	Miss Clark.
A Thoroughbred Yearling	W. R. W. Shand.
Paddy	W. T. Barton.
The Favourite	F. Barnby.
Foxhounds	H. Molyneux.
The Last Load	A. Brooker.
Monkstown Regatta, 1890	W. R. Atkins.
In Shanklin, Isle of Wight	C. W. Bassano.
Sheep	F. Woodruff.
On the Sands, Bridlington Quay	T. Holtby.
We Three	E. H. Gilbert.
Prize Southdowns	H. H. Hammon.
The Emperor's Pages	Miss F. S. Stone.
Sienese Oxen	T. Langton.
Putting the Stone	A. R. Dresser.
The Home Farm	C. J. Cave.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny Stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the SELLER to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL,



LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent, the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

#### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

"Amateur Photographer," 107 numbers, from 101 to 303, clean, unbound; what offers?—Perry, 107 Farrant Avenue, Wood Green, N.

"Amateur Photographer," etc.—What offers for vols. viii., ix., xi., and xii. AMATEUR PHOTOGRAPHER, 20 6d. parts "Camera" magazine, first 16 7d. parts Cassell's "Cathedrals, Abbeys, and Churches," 7 sevenpenny parts "Countries of the World," five 7d. parts "Science for All," Stereoscopic Co.'s magnesium flash-lamp (3-wick), cost 5s., also one pair quarter match planes, quite new? Letters only.—T. C. Hosking, 35, Paulet Road, Camberwell.

Banjo.—Fine 5 stringed instrument, nickel-plated hoop, ivory keys, in condition good as new, in appropriate case, with spring lock and key; cost £5 10s.; price £2.—Mumby, 11, Alfred Place, W.C.

Cameras, etc.—Half-plate camera, two double backs, sliding stand, case, good condition (Fallowfield, maker); 65s.—Hugh Brown, Lyncroft, Braine-tree.

Instantograph, Lancaster's latest (camera only), with one D.D. slide, and set of three Tylar's metal dark-slides, with adapter for same, lot £1 10s.; sliding tripod, cost 15s., sell 8s. 6d.; also solid leather velvet-lined case, whole plate, cost 35s., sell 22s.; all, quite new and perfect; may be seen by appointment.—Letters to H. H., 30, Roupell Street, Lambeth, S.E.

Stereo camera, brass-bound (by Hare), long extension, with six double backs, in leather case, in perfect order; cost £15.—Capt. de Crespigny, Werge's Photographic Stores, Berners Street, Oxford Street, where camera can be seen; price £5.

Cameras, Lenses, etc.—For sale, first-class whole-plate camera, conical bellows, reversible back, rising and horizontal front, three double dark-slides, R.R. lens, 9 by 7, in splendid condition, tripod, and leather bag to camera, only been used once; cost £20; take £12; a bargain.—Address, T. L., 11, Eton Villas, Harlesden, N.W.

Splendid half-plate camera, removable stereo division, three double backs, canvas case, £1; Fallowfield's whole-plate W.A. lens, 3.5, great bargain; see these.—Werge's Photographic Stores, Berners Street, Oxford Street.

Lancaster's 1891 International half-plate camera, three double backs, tripod, 7 by 5 Optimus R.R. rapid view lens, both iris diaphragms, Gem drop shutter, time and instantaneous, instantaneous shutter for view lens, finder, and case, complete, new this year, only used twice; £9; cost 10 guineas.—E. Phillips, Leatherhead.

For sale, quarter-plate camera, all movements, extension 22 in., rectilinear lens, shutter, tripod five double slides, and view-finder; £1 15s., or will exchange good detective.—Wall, 8, Crescent, St. A. d.

For sale, Lancaster's Instantograph camera, lens, shutter, stand, three double backs, all new; price £4.—Metcalfe, Rodley, Leeds.

Obadwick's 6 by 4 stereoscopic camera, 12 Barnett's slides Wray's 5 in. and 7 in. stereo lenses, Thornton-Pickard shutter, and number of accessories, all new last July; ready for selling, obliged

give up photography.—Write for particulars to No. 107, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

18 by 14 enlarging camera, in unvarnished pine, conical bellows, focussing screen, double slide, with pair of 6 in. Optimus condensers and lamp, for daylight or night work; 50s the lot; what offers?—K. 26, Radpole Road, Fulham, S.W.

Lancaster's quarter-plate Moritosa camera, complete with lens, tripod, and two double backs, in thoroughly good condition; cost two guineas; price 25s.—S. Rossiter, Fernham, Paignton, Devon.

Lancaster's half-plate 1890 Instantograph, side, and tripod, fitted with Optimus R.R. lens, not soiled, only used a few times; £35s.—C. Hall, Bradmore House, Chislewick Lane, London, W.

Condensers, etc.—Condenser 10 in., two lenses, mounted on mahogany base and iron standards, also enlarging camera, 12 by 15, with carriers to quarter-plate; £7 7s.; or sell separately. Can be seen at the offices of the AMATEUR PHOTOGRAPHER.—W. Wells, 14, Girdler's Road, West Kensington.

Hand-Camera.—Kodak, No. 1, in perfect condition, used very little, owner buying larger one; cost £5 5s.; what offers?—Sargent, 4, Seville Street, Lowndes Square.

Hand-Cameras, etc.—Rouch's Eureka hand-camera, quarter-plate, horizontal and vertical finder, detachable changing back, adjustable shutter, solid leather case, £6 5s.; alpenstock tripod, 15s.; Ransom's copying table, £1 (10 by 8); whole-plate Eastman's roll-holder, as new, £3 15s.; Hae's candle lamp, 15s.—Dr. Winter, 4, The Birklands, Hilsae.

Hand-camera, automatic changing, holds 12 quarter-plates, with lens, shutter, etc., complete, price 4 8s. 6d.; whole-plate bellows camera, long extension, all movements, one double back, price 70s.—T. Mercer, 11, King Street, Sparkbrook, Birmingham.

Lanterns.—Lantern, optical and enlarging combination, by good maker, strong and cheap.—Reynolds, 17, Camberwell Station Road, S.E.

First-class binocular lantern, with all accessories, cylinders, etc.; cost over £40; sell for £24; full particulars.—Edward Dyson, Sharnbale Lane, Huddersfield.

Lenses.—Dallmeyer's half-plate triplet lens, very good condition, cheap; 50s., or offers.—H. Cooke, 3, Weekday Cross, Nottingham.

Pair Optimus 5 by 4 lenses, Euryscope, for stereoscopic work; price £1 15s.—Taylor, 75, Huddersfield Road, Dewsbury.

Dallmeyer's 6 by 5 R.R. cost £5 10s.; Wray's 4 in. W.A.R. cost £1 15s.—Offers to No. 107, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lenses, etc.—Half-plate rapid doublet lens, French, no stops, splendid definition; approval; 15s.—J. Kirkpatrick, Painter, Helensburgh.

Rapid rectilinear lens, half plate, movable hood, Waterhouse stop, suitable for either film or portraits, focal length 8 in., clear definition; lowest 27s. 6d.—Thurston, 23, Gt. St. Paul, Victoria Park.

Excellent English rapid rectilinear lens, 10 in. focus set of diaphragms, good condition; 30s.; approval.—D. Padgham, Northiam.

5 by 4 Euryscope, f/6 lens, Waterhouse stops, bargain, 18s.—R. Henry, 2, Hawthorn Villas, Slad Road, Stroud, Glos.

Levi's portrait lens, 15s.; lantern objective, 10s.; Lerebours and Secretan's quarter-plate portrait lens, 20s.; quarter-plate portrait lens, 15s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

Sets.—Complete half-plate set, including double extension camera, with sliding back and all latest movements, three double dark-slides, in perfect condition, improved rigid telescopic tripod, with table top, first-class R.R. lens (by Price, Talbot, and Co.) quite new; price £6 6s.—C. H. G., 15, Playsey Road, Catford, S.E.

Underwood's quarter-plate set and shutter; exchange with cash for hand-camera (Calmer pre-

ferred) or offers in cash; approval.—Tucker, Gloucester Road, Teddington.

Sundries.—Large toning dish, quarter and half plate printing frame, lamp, quarter-plate box, quarter and half plate tray, pack of bromide paper, whole-plate, squeegee, cutting shapes, quarter and c.d.v. focussing glass; lot 10s.; bargain.—Daniel Clark, Summer Street, Slip Road, Luton.

For sale, light waggonette, and silver-plated harness, double bicycle, convertible, 14 ft. sailing canoe, 54 in. bicycle, balls everywhere, typewriter, 10 tons good Lucerne; offers wanted, or exchange.—G. S. Cousins, Birchington-on-Sea.

8 packets Paget Priz quarter-plates, 1888 XXX; would exchange for Wall's "Dictionary," Eastman bromide paper, half-plate Ilford's.—M., 21, Osmaston Street, Derby.

#### WANTED.

Burnisher.—A small burnisher. Apply to S. Kirkham, Court Place, Carlrow.

Cameras, etc.—Small camera, with stand, etc., complete; will exchange magnificent Gem air-gun, with case, slugs, darts, and tweezers, complete; cost £2, almost unused, range 200 yards; approval on both sides.—F. T. A., 13, St. James's Road, Kingston-on-Thames.

Cameras, Lenses, etc.—Good modern camera, lens, tripod, etc., complete, in exchange for very good violin, or Ruskin's works, complete set; give particulars.—O. G. Mackay, Lochcarron, Ross-shire.

Dark-3 slide.—Dark-slide, not less than 18 by 18, perfect; state lowest price; approval; deposit.—Morhead, 30, Rosemary Street, Belfast.

Hand-Cameras.—3½ by 3¼ Kodak, or Facile, or stereo camera.—Hummel, 2, Thomas Street, Newcastle.

Swinden and Harp's, Facile, Eureka, or any good hand-camera, must be in good condition and cheap.—F. Gregg, 41 Cricketfield Road, Clapton, N.E.

Griffiths hand-camera, or any other, perfect; will exchange 10 parts Cassell's "Popular Gardening," 20s.; volume "Kew Dictionary," 8s. 6d.—Watson, 18, Smeaton Street, Battersea.

Hand-Cameras, etc.—First-class quarter hand-camera, or lens for same, 54 in.—Longden, Wharfedale Chambers, Bank Street, Sheffield.

Lantern.—First quality Lancaster enlarging lantern, 6 in. condensers, or Hughes' bijou half-plate ditto.—M. Bett, Hazel Bank, Sydenham Hill.

Lantern Slides.—To purchase second-hand lantern slides, also coloured slides of stories, etc. Good binocular and 12 by 10 R.R.—W. V. Morris, 34, Parade, Cork.

Lenses.—4 12 by 10 lens, R.R., good maker.—G. J. Cousins, Birchington-on-Sea.

Euryscope and wide-angle lens.—Particulars to A. D. Clarke, Paignton, Rugby.

Outfit.—Quarter-plate outfit, by good maker, cheap for cash; also Rouch's quarter hand-camera and Watson's outfit tripod.—No. 103, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Roller Slide.—Eastman's roller slide, 5 by 4, latest, must be cheap.—Osborn, 4, Lansdown Road, Tottenham.

Set.—Good half-plate set, three slides, lens optional, cheap.—86, Albert Road, Croydon.

#### Lantern Slide Exchange.

NOTE.—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

S. L. Coulthurst, 78, Collyhurst Street, Manchester, wants slides of Belfast, Antrim coast road, Portrush, and Coleraine to complete set; offers in exchange, cattle, shipping, Cheshire, or other Antrim slides.

#### NOTICES TO SUBSCRIBERS.

Subscriptions must be prepaid.

UNITED KINGDOM .....	Six Months, 5s. 6d.	Twelve Months, 10s. 10d.
POSTAL UNION .....	" " 6s. 6d.	" " 12s. 0d.
INDIA, CHINA, ETC. ....	" " 7s. 6d.	" " 15s. 2d.

#### NOTICES AS TO ADDRESS.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the Amateur Photographer are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—SALE and EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

ADVERTISING DEPARTMENT.—All communications respecting Trade Advertisements in the Amateur Photographer are to be addressed to PERRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—Trade Advertisements are received up to Tuesday morning.

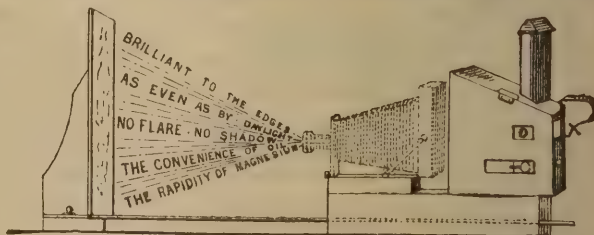
EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or Apparatus for Notice or Review are to be addressed to the Editor, Amateur Photographer, 1, Creed Lane, Ludgate Hill, London, E.C.

NOTE.—To ensure insertion, all Communications should reach the Editor on Tuesday.

#### ENLARGING MADE EASY

BY SHENSTONE'S

#### PATENT ENLARGING LANTERN & STAND



Will give any size Picture from any size Negative. Can be used for reducing to Lantern Slides, and for Copying BEST IN THE MARKET.

Price £5 10s. complete.

For full particulars apply to

J. C. SHENSTONE, PHOTO. CHEMIST, COLCHESTER.



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645      Telegraphic Address: VINEY, LONDON      Offices: 1, Green Lane, Ludgate Hill, London, E.C.

VOL. XIII. No. 332.]

FRIDAY, FEBRUARY 13, 1891.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

**OUR VIEWS.**—Monthly Competition No. 21, "Animals, Instantaneous," etc., the Awards—Monthly Lantern Slide Competition—Differential Rates of Subscription—Photographic Societies for Pudsey, and Shoreditch—What a Prize-winner Says of our Medal—Composition as applied to Pictorial Art—Photography at Enfield—The Exhibition at Manchester—The New Photograph Friend—The Decimal System—Mr. H. P. Robinson's Photographs at New York—A Camera Society for Newport, South Wales—Lord Rayleigh on Photography—The Photographic Exhibition at Vienna.

**LEADER**—Simpl'city.

**LETTERS.**—The Vienna Exhibition (Maskell and Davison)—Mr. Prinele on Photo-Micrography (Vereker)—Aristotype Paper (Wall)—Printing on Rough Paper (Noverre)—Society for Shoreditch (Wallis)—Delays in Transit (Dillon)—Enlargements (Monkhouse)

**ORIGINAL ARTICLES.**—Composition, Light and Shade, illustrated (Robinson)—Chemistry for Photographers, illustrated (Botmanley)—Photographic Work for the Winter Months (Perkins)—Photo-Micrography, illustrated (Pringle)—Chloride of Magnesium (Wall).

**APPARATUS.**—Hunter's Rooker.

**OUR CONTEMPORARIES.**—Combined Developer, Pyro and Hydroquinone (Antony's)—Developer for Transparencies (American Jl. of Pho.)—Art Principles (Wilson's)—Etching (St. Louis)—Burnishing (Phot. Herald)—Reproductions (Engineering).

**NOTES.**—Paris: Instantaneous Photography—Nature-coloured Photographs—Photo Album—Photographer's Compass—Fogs. Liverpool: A Derelict—The Exhibition—Dinner of the Liverpool Society. Edinburgh: Intensification and its Chemistry—Photographers' Dinner—Popular Nights at Edinburgh

**SOCIETIES' MEETINGS.**—Brechin—Cardiff—Cambridge—Croydon—Ealing—Haltwhistle—Huddersfield—Leeds—Lewisham—Leyburn—Newcastle—N. Middlesex—N. London—Richmond—Sheffield—Stockton—S. London—Sydenham—Sutton—Utttoxeter—W. Kent—Wimbledon—Wigan.

THE AMATEUR PHOTOGRAPHER Monthly Competition No. 21, "Animals, Instantaneous, etc.," has only resulted in some forty or fifty prints being sent in. We have awarded the prizes as follows:—

*First Prize (Silver Medal).*

A. BROOKER. . . . . Hastings,

for a very excellent photograph, "The Last Load." In this picture we have four Sussex oxen yoked to a waggon which is being loaded with rough grass, rushes, etc. A Ross P.S. lens of 10 in. focus was used, working at  $f/22$ , and a slow exposure given to an Ilford rapid plate, with Place's shutter. The print, which is toned to a warm sepia, is on home-sensitised rough Whatman paper, of, if anything, rather too rough a surface. In some lights the effect is admirable, but still to our mind the surface is a trifle too much broken up. This picture would, in the ordinary course, be used as the frontispiece for the March number of the *Photographic Reporter*, but we very much regret to say that in transit from Mr. Brooker to us the negative has been smashed,

although it was packed in a cardboard box. Valuable negatives should always be packed in wooden boxes.

*Second Prize (Bronze Medal).*

MISS F. T. STONE . . . . . Florence.

The print which receives this medal is one of the best specimens of instantaneous work we have seen for some time, and gives a view of the Emperor of Austria's footmen who formed part of the Corpus Christi procession on June 6th. There is good definition of the faces from one side of the plate to the other. The negative was taken with a Steinheil lens.

*Equal Second Prize (Bronze Medal).*

MRS. E. A. CLEASBY . . . . . Brecon.

This is a study of three dogs—a collie, a poodle, and a rough terrier—sitting on a garden seat, taken with a Ross R.R., U.S. 16 stop, on a Paget's xxx Prize plate. The picture has a comical effect, but shows signs of considerable care and patience.

Mr. H. C. Lancaster (W. Kensington) sends a study of sheep, entitled "The Countenance Open, the Thoughts Concealed," taken with a Wray lens,  $f/16$ , on an Ilford ordinary. It is a charming little piece of composition. "In Rear of the Column," by T. Grieve (N. Shields), a print of a large number of young ragamuffins standing round a military cart containing refreshments, is very good. It was taken with a Dallmeyer R.R., stop 3, on a Mawson plate. Mr. W. R. W. Shand (Chester) sends an excellent though small picture of a man and thoroughbred yearling, taken with a Rouch lens,  $f/8$ , with one-eighth of a second exposure. The platinum print sent in is very soft, and does great credit to the worker. Mr. C. H. Davis (Richmond) sends a charming little grey Aristotype print of a barge sailing "Before the Wind," taken on an Ilford special plate, with an R.R. lens. The sender remarks that the shot was taken with an "Eclipse" camera from the deck of a passing steamer.

We would remind intending competitors that the slides for the second Monthly Lantern Slide Competition have to be sent in on or before the 19th inst.; subject, "Portraiture and Figure Studies." The competitive slides will be passed through the optical lantern at our offices on the evening of Monday, the 23rd inst., commencing at 6.30 p.m. Competitors and subscribers will be admitted on presentation of visiting card.



WE note that at the last meeting of the West Kent Amateur Photographic Society, a resolution was passed to admit amateur photographers living at a distance to become members on payment of half the annual subscription. Members elected under these rules have no vote. The district from which it is sought to secure additional members is Lee, Eltham, Crayford, and Dartford.

It is, as will be seen in our correspondence columns, proposed to form a photographic society for Shoreditch and district. We also understand that steps are being taken to start an amateur photographic society at Pudsey.

A COMPETITOR in our recent Lantern Slide Competition who was awarded a second prize, in acknowledging the receipt of medal, writes as follows:—"It is a work of art and worthy of its donors. Although it is the *first* I have received and also the *last*, I hope it is not the *last* I may receive; and as my *first* was a *second*, I live in hopes that my *second* may be a *first*."

At the last meeting of the Worcester Amateur Photographic Society a paper was read upon "Composition as applied to Pictorial Art," by Mr. W. A. Firkins. At the same meeting the American slides sent to this country by the Boston Camera Club were shown.

THE Enfield Camera Club now numbers thirty members. It has only been established eleven months, has promoted a capital exhibition, and as there are in the immediate neighbourhood of Enfield many beautiful bits of scenery, we should say that amateur photographers will increase in numbers, and many new members will be added to the club. The President, Mr. D. G. Pinkney, is a careful worker, and is already an AMATEUR PHOTOGRAPHER medallist. Mr. J. Dudin, the courteous Honorary Secretary, will, we feel sure, ere long secure the same distinction, as he is a most painstaking photographer.

AN exhibition of work by the members of the Manchester Amateur Photographic Society has been held in the Athenæum Lecture hall. The members, 400 in number, contributed no less than 700 pictures. The *Manchester Examiner* says:—"As examples of photographic art they show a decided advance on any previous exhibition by this society. Taken altogether, they may perhaps be regarded as the best collection that has yet been seen in Manchester. Almost every type of photography is represented, and it is noticeable that the members have kept pace with the development of the art. The Exhibition is conspicuous for its absence of anything which may fairly be described as amateurish, although, of course, the members cannot be classed among the ranks of professionals. Composition and method have been studied with marvellous success, and the result is a collection of photographic prints which it will be difficult to excel."

THE *Glasgow Evening News* says—"The book-canvasing fiend is simply not in it with the new photograph terror, who is at present bringing gaudy prints and woe into the homes of harmless citizens. His dodge is to get on the track of a popular minister with a good class congregation, secure a photograph of the divine, get 200 or 300 large-sized copies printed and put in cheap German frames. Securing the names and addresses of the members of the church, he goes forth with a sample, and scoops in an enormous profit from enthusiasts—principally ladies—who

pine to have the presentment of their spiritual adviser stuck in the parlour opposite the oil portrait of the 'guidman.' Transactions are all in cash, and though sometimes the pictures are fairly good, they are more often the merest rubbish. One enterprising canvasser of this stamp got an old church officer to write out 300 names and addresses from the Session books for him, and now the unfortunate congregation are pestered to death with his attentions."

THE following statement, which appeared in one of the daily papers, contains but very poor comfort for those desirous of seeing the introduction of a decimal system of weights and measures:—"The Chancellor of the Exchequer, writing to Mr. Long, M.P., acknowledging a memorial from the Dundee Chamber of Commerce, says: "I must own frankly, for myself, that though I am sensible that powerful arguments can be put forward in support of the decimal system, I cannot undertake to recommend its adoption to the country." As our readers are aware, amongst photographers, both amateur and professional, the tendency for some time has been towards the use of the decimal or metric system of weights and measures, thus avoiding that confusion which arises in photographic formulæ when given in ounces. There is, we believe, a society in London which has for its particular aims the furtherance of the adoption of the decimal system generally, and it is now preparing a memorial for the teaching of the same in Board Schools.

AN exhibition of pictures has been held in the rooms of the New York Camera Club, consisting of sixty-four photographs by Mr. H. P. Robinson, and twenty-two by Mr. John E. Dumont.

It is proposed to form a camera society at Newport, S. Wales. Rules have been suggested, and Mr. F. Parsons, Queen's Hill, Newport, who is acting as provisional Honorary Secretary, will be pleased to forward a proof slip to anyone who may be interested in the movement.

LAST Friday Lord Rayleigh gave a lecture at the Royal Institute, on "Some Applications of Photography."

CONSIDERABLE misconception seems to have arisen as to the position we have taken up with regard to the forthcoming Photographic Exhibition to be held in Vienna. The letter which appeared in our columns of January 2nd (p. 8) drew from us an editorial note, and we there stated that "our columns were, of course, open to reply." In our issue of January 23rd (p. 56) Herr Srna, President of the Vienna Club of Amateurs, replied, but we are compelled to state that, in our opinion, it was in an unsatisfactory manner. Herr Srna said that the Club consider "a passage requiring an express declaration as to how much of the work the exhibitor himself has done as a degradation, nay, well-nigh an insult, for amateur and professional alike." In our issue of February 6th (p. 89) the writer of the original letter of complaint answers Herr Srna, and in a long letter, which our readers can easily refer to, states, "My letter had one main object; it was a protest against the admission of work into a competition arranged by amateur photographers, which is not entirely the work of the exhibitor, viz., from the exposure, through development, retouching, printing, toning, and mounting, to the finished picture. In order to enforce this, I considered it my duty to direct the attention of English amateurs to this point." This is practically the bone of contention, and it is in support of this clause that we have given expression to our views in the past and still



continue to do so. We, the AMATEUR PHOTOGRAPHER, were the first to initiate and insist upon the work of exhibitors being *entirely their own individual work*; and we shall in the future still insist most rigidly upon the compliance with this rule for any of our own competitions. That our endeavours have not been in vain is proved by the fact that this is an established rule at the leading exhibitions now held in this country. Let us take the forthcoming International Exhibition at Liverpool, and we find in the "conditions" the following :

"In signing Form B, the following condition is strictly imposed on all competitors in classes 5 to 27 inclusive, viz.—That the photographs are declared to be the entire work of the exhibitor, as regards *posing and selection of subject, exposure, development, retouching, printing, and toning*. It will be observed that this condition is not imposed on exhibitors in classes 1, 2, 3, and 4.

"N.B.—In the case of firms or companies, the exhibitor must be the actual operator (working partner or assistant, as the case may be) who has performed the entire work as above described.

"In consideration of the foregoing restriction now introduced for all work put in competition (portraiture excepted) a section is reserved for trade exhibits purely for exhibition, for which there are no awards, nor yet restriction as to production of the pictures, which may be coloured or otherwise. This section is mainly intended for the large limited companies."

Now, we believe that before this condition was included in the regulations the proof or suggestion was submitted to some of the leading professional and amateur exhibitors of England, and that their opinion was decidedly in favour of the inclusion of such a clause. We will ask our readers to consider two cases—one, that of an amateur exhibitor, who poses, exposes, develops, prints, tones, and mounts his exhibit himself; secondly, that of a professional who poses and lights a sitter, whilst his chief operator exposes, another man develops, another retouches, another prints and tones, and another mounts the picture. Would it be fair to present these two works side by side in one class for any judge's verdict? We say, certainly not. In the case of the first there is not the slightest doubt that the operator deserves any medal awarded him, whilst in the second it is very doubtful as to who is the actual operator; certainly not, in our opinion, the man who poses and lights the sitter, as this does not make the picture, which is the result of many experienced and, it is to be presumed, expert hands, who are specialists in that particular department of work assigned them. We believe that in a case of copyright tried some years back, the judicial mind fully recognised the difficulty, and expressed the opinion that the actual operator was the man who did the work, not the man who took the money for the resultant picture.

This, then, is the position we have taken up, and the opinions that we hold of any exhibition to which our English exhibitors are invited to compete. That an honest amateur, at once an artist and master of the technique of photography, has nothing to be afraid of in such a clause is only too evident from the fact that there are many who have carried off medals against some of the leading professional exhibitors in this country, and it is only fair to demand from the professional who makes his living from photography, that he shall do as much for his own exhibit as the amateur who works merely as a dilettante.

We have now received the prospectus of an International Exhibition of Photography, to be held at Brussels, under the auspices of the Association Belge de Photographie, but in the regulations of this, as in those of the Vienna Club of Amateur Photographers, there is no mention of any restriction such as that for which we have so strenuously striven, and still continue to uphold, as the only satisfactory basis on which to form an international exhibition open and equally fair to both professional and amateur.

### SIMPLICITY.

It is almost impossible to make any close examination of the photographs which are to be seen gathered together at the various exhibitions, or, if the list of one's acquaintances includes many disciples of the camera, to inspect the kit they consider necessary for the practice of their art, without being struck by the fact that the beauties and advantages of simplicity are not appreciated to the extent that their importance would fully justify. In the pictures that amateurs of ordinary attainments consider worthy of public notice, and which they accordingly send to adorn the walls of this or that gallery, the want of simplicity is accountable for a great deal of that adverse criticism from art circles which is constantly being hurled at photography. Seeing the same fault at every turn, and rarely meeting with work wherein it is not painfully in evidence, the critic is apt to generalise and blame the art where he should with much more justice blame the worker. Again, much of the outcry against the photographic lens for that superabundance of detail which is so revolting to the impressionist school—or rather we ought, perhaps, to say, to those who think they are entitled to the distinguishing appellation of "naturalists," for with this misnomer they appear content—is occasioned more by the want of simplicity in the subjects chosen for photographic picture purposes, than to the fineness of the definition with which they are portrayed; simplicity in this connection being used as a distinguishing word opposed to complexity in the incidents or objects within the compass of the picture. "Get as much for your money as you can," which is apparently the motto of the age responsible for "sweating," appears to be one which, with slight alteration, amateur photographers have appropriated for their guiding principle. "Get as much on your plate as you can" may be a very good rule for a schoolboy, but, with a slight variation in meaning, it is about as bad a one for a photographer as can well be made. It is responsible for the greater portion of those sins of omission and commission against the elementary rules of art which photographers are so constantly perpetrating. It is next to impossible to have all the incidents in the scene when it is on any extended scale in correct position, or so placed that the important features of the picture are not dwarfed, or so depicted that they fail to assert that prominence which they ought correctly to be accorded. The mind is distracted; the eye, instead of gliding imperceptibly from one point to another, passes over the picture with a series of jerks which utterly preclude that repose being felt which should be possible with all work entitled to be classified as artistic. If the paintings of renowned artists are to be chosen as models for the photographer, from which to learn the beauties of successful composition and management of lines, then most certainly he must recognise the fact that the limitations of his art should prevent it from being used to produce scenes which in any way resemble "The Derby Day," or "Railway Station" class of picture. Simplicity, and its concomitant result "breadth," should be the characteristic features of photographs; then the drawbacks that are supposed to ensue from the wealth of detail which the plate records would not be so conspicuous, nor would the excessive detail assert that painful aggressiveness which in the general work of photographers, it must be confessed, is too often apparent.

Then, again, leaving the domain of simplicity in the subject of the picture, many amateurs fail to recognise the advantages which can be personally conferred by learning how to simplify the apparatus which the practice of their art necessitates, or that can result from acquiring the skill of being independent of many of those odds and ends which certain workers regard as necessities. A light camera with



simple adjustments, and a light bag in which to carry it, are luxuries which are not sufficiently appreciated. Such adjuncts as levels, eye-pieces, exposures tables, view-finders, and numerous other additions to the impedimenta which some amateurs consider indispensable should be banished. They are only mechanical aids to doing work which the senses are quite capable of accomplishing without their assistance. They are crutches on which to lean, and no one who is not crippled mentally need resort to them. Moreover, by placing reliance upon instruments of this character the faculties become so weakened by want of use that in the end the power of dispensing with such implements becomes impossible. The eyes, if the amateur gives them any training, will soon do correctly all the work which is necessary where the camera is being employed. They will select the scene so that it composes well without a view-finder, they will detect false perspective on the ground-glass screen without a level, they will gauge the light near enough to fix the duration of the exposure without sensitometers or similar articles, and they will regulate the degree of sharpness in the focussing without the use of a magnifying eyepiece. To be able to simplify all photographic manipulations, and to work independently of such innumerable mechanical aids, add considerable charms to the practice of the art, and deprive it of much of that trouble which many workers find so irksome, so that it is worth while for all true disciples of the camera to give some attention to studying the question of simplicity with respect to apparatus, as well as to other matters in connection with the art-science.

Our remarks in connection with this subject of simplicity could be very much more extended by drawing the attention of our readers to the advantages that can accrue from practising this virtue in their dark-rooms. For ordinary work in connection with the production of the negative and the various printing methods in general use, but few chemicals are absolutely necessary. The complicated formulæ so often advocated by a certain section of photographers can create no better work than is produced by men who decline to resort to the method of photographic manipulation which requires the conversion of their dark-rooms into miniature chemists' shops, but acquire the skill of making the sensitive plate yield up its secret by more simple expedients. By carefully studying the power which each ingredient in their developing formulæ can exert, and by thoroughly mastering the technicalities of development, the fact becomes impressed upon the mind that intelligence in connection with three or four simple chemicals is all that is absolutely requisite for a photographer working under ordinary conditions. And by simplifying matters in this manner a greater control can soon be gained over the character of the work produced than if the worker resorts to more complicated methods, which entail his using ingredients whose powers are beyond his ken and therefore necessitate that "trusting to luck" which is unfortunately only too prevalent a characteristic of many amateurs when developing. Of course, when the beaten path is left and the object of the photographer is more in the nature of experimenting or making research than the production of photographic pictures, then our remarks are not applicable; but in the other event, then we do not consider we can give better advice than to urge those who have only the one object in view, and especially if they are far from proficient in the practice of their art, to abandon the idea that any very extended use of chemicals is a *sine qua non* of photography. Simplicity in this respect also will be found a virtue worth acquiring, and a remembrance of this fact will add much to the comfort of the photographer, and reduce the expense which the practice of his art involves—advantages not to be despised.

## Letters to the Editor.

### THE VIENNA EXHIBITION.

SIR,—The attacks which have been made in your columns upon the promoters of the Vienna Exhibition, and the regulations they have thought it advisable to make, are, I think, very much to be regretted. The Viennese are, it appears to me, entitled to frame what rules they may think proper at their own exhibition. The terms upon which they ask us, foreigners, to contribute are extremely liberal, and we may accept or hold aloof as we please. It is surely ungraceful that their action should be criticised in such terms as those of the anonymous letter signed "An Amateur Photographer."

The writer of that letter appears to me to misunderstand entirely the aim and scope of the exhibition in his anxiety that a regulation should be framed compelling contributors to declare their exhibits to be their sole work. The exhibition, I take it, is not a competitive one arranged for beginners; for the vast multitude, in fact, who are known by the epithet of amateur (*sous-entendu*, immature). If it had been so, no doubt the regulation referred to would have a *raison d'être*. The one in question is rather of the nature of a *salon* in which it is sought to gather together the most artistic productions of photography, and in which nothing will be admitted that does not attain a certain standard of artistic quality. What exhibition of paintings or other works of art has ever, I may ask, imposed upon its contributors the signatory clause which your correspondent demands, a stipulation which, I am glad to observe, the President, M. Srna, characterises as well-nigh an insult? What is the competition "An Amateur Photographer" dreads so much? Is it not the fact that the work which is shirked by many, from their own inability or otherwise, is carried out by the employés in the studios of the photographic trade? And is it from their hands that we expect to obtain the qualities which are to receive recognition at the hands of the Viennese jury of artists?

Sir, I maintain that no photographer, capable of producing artistic pictures, who respects himself and his work would dream of committing any part of it, other than that which is mechanical, to any hands but his own. I do not allude, of course, to the ordinary print of days gone by, but to that which, allowing for all that careful and judicious development can produce, is not artistically finished on the completion of the negative. Am I to believe that such exhibitors as Davison, Sutcliffe, Wilkinson, Anstin, Burchett (to name no more) would entrust any part of their work to an employé in the establishment of a photographic dealer? Am I to believe that these men and others are afraid of the competition they would encounter there? Surely, if we may grant at all that there is any individuality in photographic art, it can only lie in him who conceives the picture. The addition made by a stranger, not to say mechanic, must be mechanical, and being so has no place, as I take it, in the programme of the Viennese Society.

Once more, let "Amateur Photographer" dismiss from his mind the idea that the exhibition is intended to be a kind of school-boy competition with a scramble for medals, and rewards for progress, and he will, I think, acknowledge how derogatory, nay insulting, it must be to demand such pledges from the artists whom it invites to contribute. We are all entitled to our individual opinion. I am sorry I cannot agree with "An Amateur Photographer." On the contrary, my hope is soon to see here an exhibition based upon such lines as those upon which I congratulate the President and Council of the Photographic Society of Vienna.—I am, Sir, yours truly, ALFRED MASKELL.

SIR,—I do not want to injure the Vienna Exhibition by the dubious blessing of my advocacy, but I think that the critics hardly do the regulations for that exhibition justice in making so much of the omission from the entry forms of a test clause as to the "production of the picture."

First of all, it would have made no improvement in the best photographs we know that more than one hand should have meddled in the production of them. As you, sir, have yourself pointed out, the photographs by amateurs stand the test in the Exhibition of the Photographic Society of Great Britain, and that ought to settle the question. Who does the printing and who does the mounting may be of importance in a beginners' competition, but as the aim of the Vienna show is to be "high-



class and artistic," only selected pictures being shown, I doubt if any unfairness will be caused or felt.

I certainly cannot understand any photographer who feels he has anything of the artist and the *amateur* in him, delegating essential parts of his work to someone else, but in competition I should certainly not feel it an unfairness that he had employed Tom, Dick, and Harry to print, retouch, and "finish" his pictures, provided a competent jury of artists were to do the adjudicating. I am, indeed, inclined to think that there is little, if any, of this discreditable kind of exhibiting or competing now going on.—I am, etc.,

GEORGE DAVISON.

Camera Club, February 6th, 1891.

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#### MR. PRINGLE'S ARTICLES ON PHOTO-MICROGRAPHY.

SIR,—All microscopists must be grateful to both you and Mr. Pringle for the articles on photo-micrography that are coming out in the *AMATEUR PHOTOGRAPHER*. I trust that these articles will encourage many readers to experiment in this interesting branch of photography, as I think workers are much required.

If one considers that a large number of microscopical objects require powers of under 100 diameters to show them, and that some of the most popular ones require a magnification of from 20 to 30 diameters, it will be seen that there is a large field open which can be experimented in without going to much expense, as they are within the compass of ordinary lenses and cameras; for instance, Zeiss charges for his one inch (24 mm.) achromatic objective 27s, and for his one inch (24 mm.) apochromatic objective 140s. I may mention that Mr. Swift makes lenses specially corrected for photography, and that his inch objective costs 33s.

The class of objects I refer to are of the character of those mentioned by Mr. Cooke in his shilling book known as "1,000 Objects for the Microscope."

I regret that Mr. Pringle did not go a little fuller into numerical aperture, as the term is new, probably, to a large number of photographers, and opticians still seem to stick to angular aperture, which gives a false idea of the value of lenses. Angular aperture is the largest angle made by the rays which enter the lens from a point of an object in focus. The numerical aperture is the sine of half this angle multiplied by the refractive index of the substance in which the front lens is immersed. In a dry objective this is *air*; in a water immersion, *water* (refractive index, 1.33); in homogeneous immersion, *cedar-wood oil* (refractive index, 1.52). For instance, take an objective of 60 degs. aperture; if the lens is a dry one, the N.A. is .5; if water, N.A. is .66; if oil, N.A. is .76. The illumination of an objective is as the squares of the N.A.; and if the N.A. be multiplied by 100 this may be taken as the resolution in 1,000 lines to the inch. This is theoretical, and takes a wave length of  $\frac{1}{1000}$  in., but is easy to remember. The actual resolution is about four-fifths of this. It is well always to decide on lenses by their N.A., as an increase of angular aperture adds much to the prices of lenses, without often giving compensating advantages. It will be remarked that N.A. is something like our U.S. numbers.—Faithfully yours,

February 7th, 1891.

J. G. P. VEREKER.

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#### ARISTOTYPE PAPER.

SIR,—There is one point in Mr. Greenwood Pim's letter on the above subject in your issue of 6th inst., which is calculated to cause more loss than any old toning bath, and that is the following:—"It is a great advantage to put the print, when just rinsed from the hypo, into alum. This entirely obviates the exceedingly troublesome tendency to curl at the edges." The action of alum upon hypo is, one would suppose, almost too well known to need any comment, but still once again it must be mentioned. Alum decomposes hypo, with the deposition of sulphur and oxide of aluminium and liberation of sulphurous anhydride according to the well-known equation—



One can well imagine, though one may not wish to experience, the result of such a precipitation and such a nascent gas as sulphurous anhydride on the silver image of the print. For the very same reason I have so long fought against the use of alum in the combined toning and fixing bath, and recommended the use of an alum bath and copious washing prior to toning. The average photographer, who may not know much about chemistry, is so imbued with the idea that "alum" is a necessary ingredient in the combined toning and fixing bath, that we have at the present

day *collodio* chloride emulsion papers put upon the market, for which an alum and hypo toning bath is recommended, and surely there is with a collodion paper no gelatine to harden.—Yours truly,

E. J. WALL.

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#### PRINTING ON ROUGH PAPER.

SIR,—Dr. Emerson, in his renunciation, refers to my use of rough drawing paper as a "revival," and Mr. Davison, in his reply, remarks that there is no novelty in the use of rough papers. I quite admit this, but papers vary greatly in the degree of roughness they possess. The paper I employ is the roughest drawing paper procurable, and the same effect cannot be produced on smoother paper. It is my impression that paper of the quality I employ was never used or suggested before the production of the photographs exhibited by me at the Pall Mall Exhibition. I may, however, be mistaken, and, if so, I trust that the gentlemen named will put me right.—I am, yours truly,

Brighton, February 7th, 1891.

W. L. NOVERRE.

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#### SOCIETY FOR SHOREDITCH DISTRICT.

SIR,—Believing there are many amateur photographers living in Shoreditch and the immediate neighbourhood who would be willing to give their aid and support in forming a photographic club in this district, I am desired by other gentlemen who are interested in the project as much as myself, to say that efforts will be made to form such a club providing sufficient number of names be received of those who would be willing to become members. All communications will be gladly received and acknowledged by, yours truly,

HY. GEO. WALLIS.

84, Shoreditch, E., February 9th, 1891.

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#### DELAYS IN TRANSIT.

SIR,—I think it is as well that all photographers who come here should know what to expect from the Algerian post-office. A roll-holder was sent out to me the 13th of December, and though I wrote and inquired about it I could obtain no tidings of its whereabouts till this afternoon, when I found it in the post-office department of the Transatlantique Company. It was directed to this hotel and marked "grande vitesse." The officials airily explained that they never delivered parcels—they must be fetched!—I remain, yours truly,

Hotel d'Orient, Algiers, February 3rd, 1891.

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#### ENLARGEMENTS BY ARTIFICIAL LIGHT.

SIR,—In your issue of Friday last I observe the report of a meeting of the Bath Photographic Society at which my friend, Mr. Pumphrey, the President, brought before the meeting an enlarging apparatus of my invention. I first made it known at a meeting of the photographic section of the Yorkshire Philosophical Society in the spring of last year, when I gave a demonstration. The object of the apparatus is the production of enlargements and lantern slides from half or whole plate negatives by artificial light *without a condenser*. I send for your inspection four enlargements so produced (two 16 by 12, two 12 by 10), all from half-plate negatives. Similar or larger enlargements may be made either from half or whole plate negatives with equal facility.

I have been recommended by some of my friends either to protect the invention or produce the apparatus for sale. I have no wish, however, to do so; I am rather disposed to offer it for the adoption of any who may think it worth while. The description of it in the report of the meeting at Bath is quite correct as far as it goes, but there are several matters of detail which should be known by anyone attempting to make one, such as size of chamber, mode of working in it without admitting white light, etc., etc. To any one wishing to know further particulars, on receipt of stamped envelope I shall be glad to answer any question. I may mention that the cost of making the apparatus is a mere trifle compared with that of a good condenser to cover a half or a whole plate negative. It is also available for the production of lantern slides from such negatives.—Yours, etc.,

10, St. Mary's, York, Feb. 9th, 1891.

WM. MONKHOUSE.

NOTE.—The enlargements are very fine, and Mr. Monkhouse has left them in our charge. They will be on view at our offices on Mondays, the 16th and 23rd inst.—Ed. AM: PRIOR.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER IV.

*Fig. 5.* The original of this sketch, a small etching by Ostade, ought to be in the possession of every artist, for its beautiful arrangement of light and shade, and the skilful way in which they are woven together. As I ought to have noticed above, that the principal mass of light in out-of-door scenes (both in nature and the best masters) is generally placed in the sky, or upper part of the picture, I



FIG. 5.—A. OSTADE.

may here remark that in interiors (especially such as are constructed upon this plan) it is generally reversed, the roof and background being reversed for a mass of shadow and repose. Ostade, in his compositions, displays such ingenuity in their construction as to render his pictures an endless source of gratification and study to the artist. In some of his works, the art is so completely hid as to make it difficult to say, whether his background or figures were the first composed. We have not only objects intercepting each other in the most natural and picturesque manner, but the figures carried up against them; thus coming in contact with various forms different in size, distance, and colour. This, when done with judgment, gives a rich and inartificial effect. On the contrary, in the pictures of Teniers, we often find a number of objects cast down in one corner, evidently for the mere purpose of being painted; which, however, from their situation, their picturesque arrangement, and the mechanical skill of the execution, acquire a force, natural sharpness, and beauty that amply compensate for the ostentatious display of such excellencies. Tenier's backgrounds are also totally different from Ostade's principle; his figures being generally surrounded with blank spaces of shadow or half tint. When a story is to be told that requires the spectator to be directed to the heads and hands for expression and action, this breadth

is more allowable; but breadth, as Mr. Fuseli justly observes, ought never to have the appearance of "flatness or insipidity." It is observable that, in an exhibition where



FIG. 6.—CLAUDE.

there are a number of objects to distract the attention, those pictures please us most on which the eye is allowed to rest, from their possessing a vacant space; but those very pictures uniformly look blank and unfurnished when hung up singly in a room.

*Figs. 6 and 7.* Claude, in many of his compositions, displays very little address in bringing up his strong dark against the light. In him, it often looks like unaffected primitive simplicity; but it might not be so considered in an artist of the present day. When Claude introduces a figure for such purpose, or in order to give a retiring delicacy to his distance, we often find it of a strong dark blue, which serves also to bring down the same colour from the opposite angle of the sky, thereby producing a union between both



FIG. 7.—CLAUDE.

sides of the picture. I may notice here the length of line produced by the cattle in fig. 7, as it assists the perspective effect, in carrying the eye into the picture, serving also as



a base line for the landscape to rest upon. When the sun is placed near the point of sight, we sometimes see shadows made use of for the same purpose. A straight line is often necessary also for the sake of variety; and when architecture is not present, we must get it how and where we can.

An excellent reproduction of Ostade's famous etching will be found in Hamerton's "Etching and Etchers." This practised writer's remarks on the composition will be of interest. It must be borne in mind in reading it that Burnet's sketch of the etching is reversed:—"It is the most perfect work of the master, and quite remarkable for lighting and composition. Ostade's sense of what was necessary to the support of a group is like an instinct which led the Gothic builders to use buttresses and low chapels round their edifices, and which in nature gives artistic value to the slopes of débris at the feet of mountains. For example, in this etching the composition rises always towards the right, and is buttressed by slopes to the left. See how amply the figure of a man is supported by the boy and the dog and by the seated woman. This law of diminution to the left is carried out in the most trifling accessories, in the basins above the door, in the spaces between the three cross-pieces nailed to the beams, in the two boards near the ladder, in the openings of the bed and the door. If the woman had advanced her left foot instead of her right, the man behind her would not have been so well supported, and if the little dog had been absent, the buttressing on that side would not have been continued to the ground. The lighting is, of course, intended to give importance to the group; there are admirable reflections and transparencies in the shade."

(To be continued.)

## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 75.)

WATER can be purified from suspended impurities by filtration (vol. x., p. 413). On a small scale, paper may be used; on a large scale, a layer of fine sand resting on a layer of gravel is generally employed. The upper part of the sand requires renewal from time to time. By using spongy iron, porous carbon, or certain other substances, part of the soluble impurities, including some of the organic matter, can also be removed, but these special materials themselves become foul, and require frequent attention. The complete removal of dissolved matter can only be effected by distillation, and since this method is used for the purification of other liquids, as well as of water, a detailed description will be given.

*Distillation* is a process in which a liquid is converted into

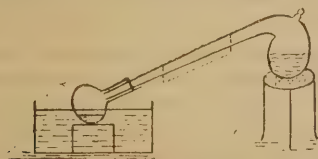


FIG. 23.

vapour in one part of an apparatus, and the vapour is collected and condensed back to a liquid in another part of the apparatus.

The vessel in which the liquid is boiled is called the *retort* or *still*; the apparatus in which the vapour is cooled is called the *condenser*; and the vessel in which the condensed liquid collects is called the *receiver*.

Fig. 23 shows an ordinary glass retort with a receiver. The neck of the retort acts as the condenser, and is kept cool by the action of the surrounding air, this action being assisted, if necessary, by placing round the neck a piece of

filter paper, which is kept continually moist. To ensure complete condensation, the receiver is placed in cold water.

Fig. 24 shows the apparatus known as a Liebig's condenser. The flask A, which acts as the retort or still, is connected by means of a cork with a long tube, which passes through a wider tube. The space between the two tubes is

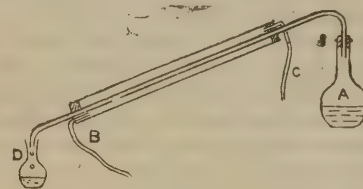


FIG. 24.

filled with cold water, which flows in constantly at the bottom, through the tube B, and out at the top, through the tube C, and the condensed liquid drops into the receiver D.

Fig. 25 shows a larger apparatus, capable of distilling considerable quantities of liquid. A is a tin can, holding two gallons or more, B is the worm or condenser, constructed preferably of block-tin if water is being distilled, but of glass if the liquid will act upon metals, and placed in a tub of water.

In all cases care must be taken that the liquid does not boil so violently that portions of it are projected into the condenser.

Simple distillation will yield water pure enough for most

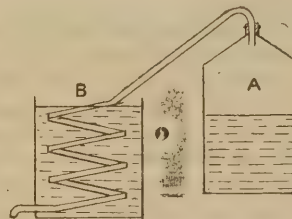


FIG. 25.

purposes, but when particularly pure water is required some water which has already been distilled is mixed with some potassium permanganate and caustic potash, and is again slowly distilled, the first third being thrown away, the second third collected for use, and the remaining third left in the retort or still. The water must be collected and preserved in perfectly clean glass vessels provided with well-fitting glass stoppers.

Reference has already been made to the great solvent powers of water, and it will be convenient to consider here the laws which regulate the solution of substances, not only in water, but also in other liquids.

**SOLUTION** denotes the perfect admixture of a solid, gas, or a second liquid with a given liquid, so that it forms part of the latter and yields a homogeneous product, the constituents of which show no tendency to separate again so long as the conditions remain the same.

**EXPERIMENT 93.**—Shake a few crystals of potassium iodide with some water in a test-tube; observe that the iodide disappears and shows no tendency to separate when the liquid is allowed to stand. Place the liquid in a dish, and heat it on a small water-bath; the water will volatilise, and the potassium iodide will be left behind.

Whenever a solid, gas, or a second liquid becomes intimately mixed in this way with a particular liquid, it is said to *dissolve* in it and form a *solution*, the particular liquid being called the *solvent*. The solubility of the substance is measured by the quantity of it dissolved by 100 parts of the liquid, or by the quantity of it contained in 100 parts of the solution. It is important to be quite clear as to which



mode of statement is used, for obviously the numbers will not be the same in both cases, although they represent the same proportions of the substance and the solvent.

For instance, at the ordinary temperature, 100 parts of water dissolve 36 parts of common salt, *i.e.*, 136 parts of the solution consist of 100 parts of water and 36 parts of salt. We may state the same result by saying that 100 parts of the solution contain 26.5 parts of salt.

The solubility of a given substance in a given liquid depends in the first place on the nature of the substance and the nature of the liquid. Some substances, like silver nitrate, potassium bromide, and sodium thiosulphate are readily soluble in water; others, like mercuric chloride and calcium sulphate, are much less soluble; whilst others, like silver bromide and silver iodide, are not soluble at all. Some substances which dissolve readily in water will not dissolve in alcohol—*e.g.*, common salt, alum—whilst others are insoluble in water but soluble in alcohol—*e.g.*, many oils and other organic compounds.

The solubility of solids in water and other liquids is greater the higher the temperature. There are a few apparent exceptions to this law, but they need not be considered here.

EXPERIMENT 94.—To 100 grms. of cold water add 70 grms. of ammonium chloride, and agitate for some time; observe that the whole of the salt does not dissolve. Now gradually heat the mixture, continuing the agitation; observe that as the temperature rises, more and more of the salt dissolves, until it has entirely disappeared. Allow the liquid to cool: observe that as the temperature falls, the salt gradually separates again.

EXPERIMENT 95.—Perform a similar experiment with 100 grms. of water and 200 grms. of alum.

When a solution contains as much of a solid as it can contain at the particular temperature, it is said to be *saturated*. If the temperature falls, it will deposit some of the salt, because the solubility diminishes with the temperature; if the temperature is raised, the solution is no longer saturated, but will take up a further quantity of the salt. The influence of temperature on solubility is clearly shown by the following table, which gives the maximum quantities of the various salts dissolved by 100 parts of water at the temperature specified:—

		Common salt.	Potash alum.	Potassium nitrate.
0° C.	..	35.6	3.9	13.3
10°	..	35.7	9.5	21.1
20°	..	35.9	15.1	31.2
50°	..	36.7	44.1	86.0
100°	..	39.2	357.5	247.0

Notice how small the effect of temperature is in the case of common salt, and how large in the other cases.

If a saturated solution is kept quite still and out of contact with dust, and especially with solid particles of the same salt, it may in several cases be cooled down considerably without depositing any of its salt. It then contains a greater proportion of salt than it would contain under normal conditions, and is said to be *supersaturated*. Supersaturated solutions are in a very unstable condition, and agitation, contact with dust, and especially contact with a solid fragment of the particular salt, causes the excess of salt to separate, until the quantity left in solution is the quantity properly corresponding to the temperature of the solution.

When solid substance separates from solution they frequently assume a definite geometric form, or, in other words, they crystallise. Many salts when they separate from an aqueous solution combine with a definite proportion of water (see SALTS).

## Photographic Work for the Winter Months.

BY T. PERKINS, M.A.

### CHAPTER IV.

INDOOR WORK—PRINTING, LANTERN-SLIDE MAKING, ETC. The weak light and short days of winter render printing in silver a work of difficulty, but I believe that every year an increase in the number of those who have discarded albumenised paper for matt-surface paper of some kind may be noted. Gradually popular taste is being educated, and I trust that at no very distant period a glossy-surfaced photograph will be looked on much in the same way as a varnished engraving would be looked on now. Of course, there are methods of printing in silver which do not show the objectionable gloss, but when we consider the greater permanence of platinum and bromide prints, and the fact that now a variety of tones may be obtained in them, it seems to me desirable to use these processes in preference to any of the newly invented or re-introduced methods of matt-surface printing in silver. By means of bromide paper we may, as most photographers know, make good prints from many negatives that would not by any other process yield a print fit for any place but the waste-paper basket or the rubbish heap. Negatives wanting in contrast, with the shadows veiled in fog, may often be made to produce bright and vigorous prints. Artificial light is most suitable for contact bromide printing, and hydroquinone is probably the simplest developer to use. With this there is no necessity for a clearing acid bath, such as must be used when the erroneous oxalate developer is employed, but great care must be taken to use a new fixing bath, and to throw it away and take a fresh one as soon as the slightest discolouration in the solution is seen, otherwise the whites will lose their purity. This work is well suited for winter, and it is well to reserve the printing of such negatives as I have been describing to this time of year. But I should myself never print a negative on bromide paper that would give a good print in platinum. The platinum process is simpler, and though the time of exposure is longer, yet the time spent over development is much less, and the subsequent washing much less troublesome. We often hear it stated that negatives must be especially prepared for platinum printing, and we are led to ask, "What are the characteristics of a negative suited for this process?" Many would say the negatives must be exceedingly vigorous and dense, but I have made some of my best prints from very thin negatives, not flat ones, but negatives in which the deepest shadows were absolutely clear glass, and the skies so thin that when the negative is held an inch or two above a well-lit sheet of printed matter the words can be read through the film. To print such negatives, diffused daylight should be used, and not direct sunlight, but when the negative is denser I prefer to print in direct sunlight, as I believe a short exposure to a strong light has a greater effect than a longer exposure to a weaker light in bringing out the clouds in a picture—a point always to be aimed at, for no clouds can be so true to the lighting of the picture as those that were floating in the air at the time the negative was taken. Printing in clouds from "cloud negative" is an unsafe method at all times, and I cannot see how those who approve of this method can find fault with "combination printing," which has been so vigorously and almost unanimously condemned. One kind of cloud negative alone would I use, and that is one taken immediately before or after the other negative without moving the camera, but exposed and developed with special reference to the clouds. But this is a digression. Platinum



paper is so sensitive that on many winter days the light is sufficiently strong to print a large batch of prints in a day, using from half-a-dozen to a dozen printing frames. In mid-winter ten o'clock will be quite early enough to begin, and no prints should be started after two o'clock. The development should be done the same day, as soon after the printing is over as possible, and may conveniently be done by gas light. After having for a time abandoned the hot-bath process for the cold, I have returned to the original method as less expensive on the whole, a consideration, now that the price of platinum is so high, and as being less liable to defects. If a brown tone is desired, the special sepia paper may be used, or if only a few prints of a brown colour are wanted, they may be reserved to the last, and before they are developed a little of the bichloride of mercury solution ordinarily used for intensifying negatives may be added to the hot developer. I first noticed the effect of mercury in giving a brown tone to the prints from observing that prints from unvarnished negatives which had been intensified with mercury often turned out brown. If we want black prints from such negatives, it is well, especially in winter time, to well warm them before the fire just before printing, so that they may not, through being slightly damp, communicate any mercury to the paper.

The paper now supplied by the Platinotype Company will keep for some time; still, I generally do not open a tube until I have sufficient printing to do to use up the whole contents of the tube within a week or so. Oxalate of potassium is so cheap, that it is scarcely worth using the same solution for more than one or, at most, two batches, as the prints are always more brilliant when the solution has not been used before.

Lantern-slide making is most fascinating work, and a good lantern-slide when made is, or ought to be, a joy to all beholders. There is still, however, I find, among many persons, a prejudice against lantern exhibitions. They say magic-lantern shows are suitable for children, but one can hardly expect those who are grown up to go to such entertainments. This is due, I believe, to two things: first, the remembrance of what the magic-lantern was in their younger days; and, secondly, to the fact that even now so many slides shown at entertainments are coloured. A coloured slide is, in my eyes, an abomination; it much resembles, in its effect, a coloured engraving produced by putting washes of water-colour over a woodcut or line engraving printed in black or brown ink. We see such things occasionally, and most of us have produced such "works of art" in our younger days. It stands to reason that a coloured lantern-slide cannot be like nature; the black or brown of the photograph on the film must show through the transparent colours, which can alone be used for the slide, and destroy their purity. It is impossible, for instance, to give the correct colour to grass or foliage, hence the coloured picture, when projected on the screen, while pretending to be an accurate transcript of nature, is not at all natural. Far better is it to simply attempt to produce a picture in monochrome—black, or grey, or brown, according to one's fancy. Coloured slides often resemble the scenic effects produced by lime-light on the stage far more than they resemble nature. I think it well, then, that every amateur photographer who cares to advance the dignity of his art should do what he can to improve popular taste by refusing to exhibit any but uncoloured slides; and, moreover, to avoid reading the "illustrative readings" supplied with sets of slides, with their dry statistics and poor jokes, which make many lantern exhibitions in village schoolrooms and mechanics' institutes so wearisome. The subject should be well prepared beforehand, and the lecture delivered from notes, and not read from a printed book or from a fully written

out manuscript. The circulation of lantern-slides which have been sent in for the AMATEUR PHOTOGRAPHER competitions ought to do much to educate the public to a just appreciation of good work.

I do not intend to give any formulæ for the development of lantern-plates—many may be found in the directions supplied with them—nor to recommend any particular brand of plate. I have tried several different kinds, and as a rule have found them good, but in most varieties one occasionally comes across a plate scratched, or with a bubble in the glass, and I have once or twice found every plate in a box frill and blister, while other boxes by the same maker were entirely free from this evil. Possibly this mischief may have been caused by improper storing. Of the two methods of making transparencies, namely, contact printing and copying in the camera, I much prefer the latter, even when the negative is copied the same size, for any want of flatness in the negative or lantern-plate which would prevent perfect contact, and might cause loss of sharpness, is rendered harmless when a copying camera is used; and, moreover, there is always a danger of scratching a negative when putting the lantern-plate in contact with it, and even of breaking a negative by the unequal pressure of the back of the printing-frame. Griffiths' lantern-slide making camera is a most useful little piece of apparatus, and so cheap that it is well worth having several of them to take the different sized negatives which we are in the habit of making. These cameras are made either square or oblong. If one only can be afforded, an oblong one is decidedly the most useful; but if more than one is bought, a square one for a certain sized negative can be used as an oblong one for a smaller sized negative by simply fastening the negative in a corner and sliding the carrier into the grooves. There are several reasons for preferring oblong pictures to square or round ones for lantern-slides: first, round or square pictures are not pleasing; if they had been, we should not find painters always avoiding a square canvas, and so seldom using a round one. Again, most photographers, when taking their negatives, have an eye to printing paper positives as well as making lantern-slides from them, and any one who goes about his work judiciously will compose his picture well upon the ground-glass of the camera, and in most instances cutting off the ends of the picture, so as simply to take a square from the centre, will entirely spoil the balance.

I find that when using one of these cameras I can without any help expose and develop about a dozen plates in an hour. The way in which I economise time is as follows:—First I look out the negatives I wish to copy, open a window of a room into which the sun is not directly shining, make some arrangement by means of a chair or box for conveniently placing the slide-making camera in a sloping position, so that it may point to the open sky, then I take the camera into the dark-room, insert the negative at one end and the lantern-plate at the other, carry the whole affair to the open window, and expose for such time as I think will be sufficient (at the present time, at midday on a bright day, at a window with a south-eastern aspect, using a stop of  $f/22$ , I find one to three minutes sufficient exposure). I then take the camera back into the dark-room, remove the lantern-plate, place it in the developing dish on a rocker, and then insert another lantern-plate; by the time this has been done the picture should be coming up, and it can be seen whether the slide is likely to be satisfactory or not. If it promises well, I change the negative and take the camera out for another exposure, and while this is being made I return to the dark-room and finish off the former slide. If, however, an assistant can be found to take the camera, when loaded, from the dark-room to the



window and manage the exposure, so that one's uninterrupted attention can be devoted to the development, the chance of occasionally over-developing a plate is avoided. If a slide should be too thin it may be intensified, and of those intensifiers which I have tried, I have found that mercury followed by ammonia gives the best results; any intensifier which in any way tends to block up the transparent parts of the slides must be avoided. I have never yet succeeded in getting a good result by reducing a slide which has been over-developed, for in over-development the bright parts of the picture get fogged, and this fog will not be entirely removed by reduction. Good clouds in a slide add greatly to its charm, but the only satisfactory way that I know of producing them is by having them in the negative, and if necessary and possible, shading the foreground of the negative with a sheet of card during part of the exposure. Printing clouds on another plate and using this as a covering glass is possible, but this method labours under all the disadvantages of combination printing. When the slides are fixed, washed, and dried, it remains to put masks between them and the covering glasses, and to bind the two 'glasses together. Varnishing before binding is an additional protection to the pictures. As a rule, oblong-shaped masks are best; these show the whole picture. If it is desirable to take off rather more than the mask will hide, a piece of a binding strip may be used to reduce the size of the opening. Binding the transparency and the covering glass together is a very easy matter, or a most tiresome one, according to the character of the binding strip; some are very good, others are as bad, refusing to stick to the glass. None that I have used can beat those made in several different colours, and sold by Vevers, of Leeds. When the mask has been arranged, I can bind a slide with one of these strips without difficulty or hurrying, in the space of a minute. When all the slides are bound and the binding is dry, they should be held over a white sheet of paper and turned over, if necessary, so that the picture is seen with the right and left sides as they would be in nature; and two little white discs about an eighth of an inch in diameter should be stuck at the two upper corners. These can be easily seen in the dim light of the room in which the pictures will be exhibited, and if these are placed downwards and facing the condenser, the picture will be shown as it should appear on the screen. Many exhibitors fall into the mistake of attempting to enlarge the pictures on the screen to such an extent that there is not sufficient light to show them well; brilliancy is of far more importance than size—a large, dimly lit picture in which the details can hardly be seen, is anything but pleasing. The stronger the light used, the larger the projected pictures may be made; hence, when using an oil lantern it is well to confine the size of the illuminated circle to a diameter of four or five feet, while with a lime-light lantern a circle of twelve or fifteen feet, or even more, may sometimes be used with advantage. The best lantern slides are those made from negatives full of detail and sharp withal, for, owing to the increase of size when the picture is projected on the screen, broad patches of light or shade without any detail showing offend the eye, and, of course, with the increase of size sharpness is lost, so that if the slide is fuzzy the picture on the screen will be blurred to an unbearable extent.

There is one other form of photographic work well suited to the winter months, about which a very few words must be said—namely, enlarging. Enlargements may be made either by daylight or by artificial light. The former is by far the simpler process, and does not need the expensive apparatus which enlarging by artificial light requires. The best lens to use for this work is the achromatic triplet, made on Dallmeyer's principle, on account of the flatness of

its field. This can be fixed in a camera similar in character to that alluded to above for reducing; when making lantern slides, the lens should be placed so that the end of the tube which was nearest the sensitive plate when the original negative was taken is turned towards the negative to be copied. By inserting the negative in a groove at one end, and a sheet of bromide paper fixed in a carrier at the other, an enlargement may be made without difficulty. Unless some arrangement for focussing be made, the negative will, of course, be always enlarged to the same extent, but this will probably be enough for most purposes. The result of enlarging is to uniformly diffuse the focus if the negative from which the enlargement is made is uniformly sharp, and to keep the due gradations of sharpness by proportionately softening the whole if the negative has been taken according to the principles of differential focussing. One advantage that an enlargement has over a print from a large direct negative, is that the difficulty of getting the various parts of the picture into reasonable focus together, owing to the shallowness of focus of long-focussed lenses, is avoided.

I have now touched on most of the work that is especially suitable for winter time, and now that we are well advanced into the month of February it is time to close this series of articles, for after the long and severe winter, we are all looking forward to an early and warm spring, and are beginning to hope that at no very distant period the glades and hedgerows will be clothed with leaves and flowers, so that we shall be able to begin regular work again in the open air, and to go forth, day by day, in search of the subjects which are our special delight, whether we aim at producing artistic pictures, or are satisfied with the humbler but no less useful work of making scientific records by means of camera and lens.



## Photo-Micrography.—IV.

By ANDREW PRINGLE. *Bozapeath.*

### ILLUMINATION.

IN the matter of radiants for photo-micrography there is more room for choice on the scores of convenience and expense than for difference of opinion. There is but little doubt, as there is but little denial, that the best radiant for our work is the sun; sunlight is at once the most actinic and the most visually brilliant light we can get. Much of the best work ever produced has been obtained by means of direct sunlight. In the days when the wet collodion was the most rapid process available, it was found practically necessary in high power work to use direct sunlight—witness the wonderful productions of Dr. Woodward, U.S.A.; and even to-day, with rapid plates, such workers as Mr. T. Comber, Messrs. Fraenkel and Pfeiffer, Truan and de Witt, and others find that sunlight, directed by means of a heliostat, surpasses other illuminants. But in this country when can we depend on sunlight? I might almost say, when can we expect it? For myself, I should be at a standstill much more than half the year if I depended on the sun; and as few days pass without my having to produce some micrographic negative, I had at the outset to look for some radiant more at command than the sun. Diffused daylight I have found to be in many respects a very poor radiant indeed. I have, therefore, little or no knowledge of heliostats for our purpose, and shall merely refer my readers to

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



the account of Mr. Comber's excellent heliostat, described and figured in the Journal of the Royal Microscopical Society for August of last year, 1890.

Failing sunlight, the light I should prefer would be the electric arc. This is a light of great power and actinic; it is always available where an electric installation exists, and the lamp is easily moved about. I have seen an *incandescent* electric light used with success by Dr. Van Heurck, of Antwerp; still, I am inclined to prefer the lime-light, which is more powerful, if rather less convenient, than the incandescent electric light.

A good oil-lamp is quite sufficient for ordinary purposes of photo-micrography, if the exposures necessary are not very long. It is well to have a powerful oil-lamp, one with a large wick, say one inch broad at least. Such lamps are sold by all opticians. The chimney may be round, but the part of it next the condenser should be flattened, and a metal chimney with a flat piece of glass, say 3 in.  $\times$  1 in., let into the front is the best kind I have seen. My own lamp was procured at Messrs. Swift's. The reservoir for oil should be large, and it should be of glass, so that the quantity of oil may be seen. If paraffin is used, a small lump of camphor may with advantage be added to the oil in the reservoir. I do not recommend round wicks (*i.e.*, cylindrical), still less do I advise the use of the otherwise excellent Welsbach burner. This gives a beautiful quality of light, but the constriction in the chimney, and the network of the "mantle" are hurtful to the image, even when a bull's-eye is used. It must not be forgotten that with the most powerful oil-lamp, for magnifications of 500 diameters or so, twenty minutes of exposure is not inordinate, ten minutes quite common. The mere duration of exposure is a trifle compared with the increased danger of tremor. I have, with a 1 inch-wick lamp, made many low-power negatives with an exposure of one minute, and even, at times, a few seconds; so that, if the reader proposes to confine himself to amplifications not over (say) 150 diameters, he may content himself with a good oil-lamp.

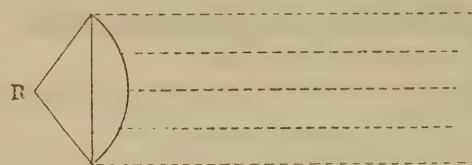
My favourite radiant, however, is the lime-light, and as many of my readers are probably already lanternists, this light may be the popular one. A blow-through jet answers fairly well, but it has the disadvantage of a large area of incandescence, and a tendency to redness of flame. Both of these are defects, the latter is particularly puzzling. I recommend a mixing jet, and in my experience it is better to have a specially small-bore nipple, that gas may not be wasted nor the eyesight hurt. Some good microscopists—many of the best, indeed—tone down the brilliance of a strong light with coloured glasses, chiefly blue. I have no doubt this is correct, but I cannot focus really accurately with a blue light, or I *think* I cannot; this is probably an idio-

accomplished by means of a "cut off" arrangement designed by myself some years ago as an addition to an ordinary mixing jet, and I figure it here (fig. 2).

There is on each tube, in front of the ordinary tap, a valve or tap having a toothed wheel operating it. The two are operated simultaneously and equally by a third toothed wheel operated by the cross-piece or T-piece seen at back of the jet. The oxygen is a complete cut-off, the hydrogen has a small bye-pass. In practice both of these supernumerary taps are turned full on, the gas lighted in the usual way and burning at its best; when the cross piece is turned slightly, the light is lowered without loss of quality; when the cross-piece is turned as far as it will go, the O. is entirely cut off, while the H. burns a small flame sufficient to keep the lime hot and to obviate necessity for relighting every time after the light has not been required. This is made by Messrs. Newton, and to me has saved its cost many times over. When I go to develop I turn down the cut-off; for the next exposure I simply turn it up again. Other arrangements with similar intention are made, but I have no experience of them, except one by Mr. C. Baker, which acts well.

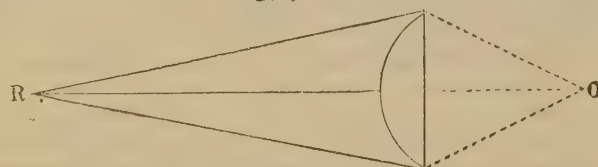
I use oxygen from a cylinder with Beard's regulator, and hydrogen from the house main; this arrangement of itself

FIG. 3a.



R=Radiant. O=Object.

FIG. 3b.



CONVERGING BEAM.

FIG. 3c.



FIG. 3d.



FIG. 3e.

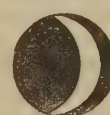


FIG. 3f.



necessitates a specially small nipple, and I see no element of danger in it, nor have had any hitch in its management. I use the hardest limes I can procure; "Excelsiors" I do not like for this purpose at all. A good hard Nottingham lime often lasts me a week; any other lasts but one day, if so long.

The illuminant, of whatever kind, should have a certain amount of motion, to and fro and sideways, but should be clamped strongly down once the central position is found.

The bull's-eye may be counted part of the illuminating system, and requires description here. A bull's-eye may be used as a condenser up to an angle of about 25 deg., and so may be used for work up to such as is done with an ordinary 1 inch O.G. But for various reasons it is, in this character, only moderately good. The real use of a bull's-eye is to collect and parallelise the rays from the radiant. In order to secure this, the light-point must be in a certain focus of the bull's-eye. The above figures will explain this,

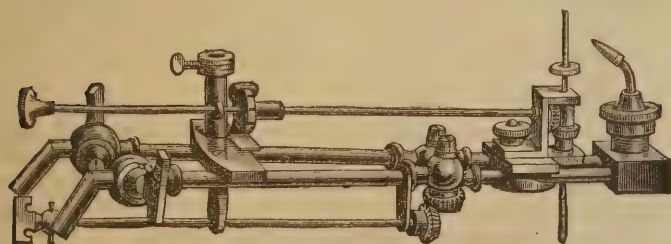


FIG. 2.

synerasy. In adjusting the correction of an objective, or in critically examining an object, I do not consider it advisable to modify the glare by shutting down too much the condenser-aperture, so I use an arrangement by which I focus with a moderate light, and thereafter turn up my lime-light to the desired extent—*i.e.*, to its full. This is easily



Fig. 3a shows the radiant in such a position that the rays are parallelised by the bull's-eye. This is the proper way when a condenser is used. Figure 3b shows a bull's-eye used as a condenser (O is the object to be illuminated).

To discover easily whether the radiant is in the focus (for parallel rays) of the bull's-eye, project the rays that have passed through the bull's-eye on to a piece of card by means of any condensing lens of low power—e.g., the field glass of a 2 inch ocular. If the light is too near the bull's-eye the image will be as fig. 3c; if too far away, as fig. 3d; if the flame is in focus but not central, the image may be as at fig. 3e. Fig. 3f shows the appearance when the bull's-eye is focussed for parallel rays and centered. These figures are copied from a paper by Mr. E. M. Nelson in the *English Mechanic* of 1885.

I strongly recommend that an iris diaphragm be fitted to the bull's-eye for centering and regulating purposes. I use a double combination bull's-eye, in the form of a Herschel condenser, i.e., a meniscus and a double convex in close proximity to each other. This is not strictly achromatic, but better in this respect than the ordinary plano convex bull's eye.

## Chloride of Magnesium

IN THE

### COMBINED TONING AND FIXING BATH.

By E. J. WALL.

It is now generally known that Herr Liesegang was the first to suggest the application of chloride of magnesium as a fixing agent, and Dr. A. Miethe, the editor of the *Photographisches Wochenblatt*, in experimenting with this, suggested the following as the composition of the bath:—

Chloride of magnesium ..	15 grammes.
Alum .. .. .	2 "
Water .. .. .	100 c.cm.

On page 34 of the *AMATEUR PHOTOGRAPHER*, January 9th, a query appears about this, which elicited a somewhat unsatisfactory reply; I therefore began a few experiments with this salt, the results of which may lead others to experiment in the same direction.

Magnesium chloride has the formula  $MgCl_2 = 95$ , and is met with commercially as a crystalline salt, very similar in appearance to the well-known household remedy, Epsom salts, when slightly damped. It has an intensely bitter taste, is extremely deliquescent, and very soluble in cold water, 1 in 1.85, and also in alcohol. It is an important constituent of sea salt, or may be prepared by neutralising pure hydrochloric acid with magnesia or carbonate of magnesia. It would be advisable to obtain it from a chemist or dealer, as it is a well-known commercial salt, and is used for dressing cotton goods and for fixing aniline colours, and should not cost more than 3s. per lb.

EXPT. No. 1.—A fixing bath was made up of the above strength, and pure dry chloride of silver added till the liquid became permanently cloudy from the suspended particles of undissolved chloride of silver, when it was found that the above bath had dissolved 0.025 grammes of pure anhydrous chloride of silver. Further experiments were made with freshly precipitated chloride of silver, well washed till the washings showed no trace of nitrate, and as the mean of six experiments the solvent power of the above bath is about 0.01–0.02 grammes per 100 ccm. As is the case with common salt and other chlorides, the more saturated the solution the more chloride would be dissolved. Unfortu-

nately, I have not yet had time to carry my experiments any further, but certainly the solvent power of magnesium chloride is inferior to that of sulphite of sodium as proposed by Abney, and this is also much inferior to the ordinary hyposulphite bath.

Practical experiments were then carried out to show how far this new fixing salt could replace hypo in the combined toning and fixing bath for gelatino-chloride prints.

EXPT. No. 2.—The first bath tried was one suggested by Mr. Tylar as follows:—

ORIGINAL.		NEW FORMULA.	
Chloride of gold ...	4 gram.	... pure	4 gram.
Tungstate of soda ...	4 "	... "	4 "
Ammonium sulpho-			
cyanide ...	6 "	... "	6 "
Hyposulphite of soda	60 "	Magnesium chloride	60 "
Distilled water, to			
make ...	200 c.cm.	... to make	300 c.cm.

The salts were dissolved by the aid of a gentle heat, the chloride of gold, which was home-made and kept in the form of an acid stock solution, was rendered distinctly alkaline by the addition of bicarbonate of soda, and then added to the solution of salts, and the liquid made up to the required bulk. The prints were placed in this bath unwashed, and the bath gently rocked; the first sign of any action was a conversion of the purple tone of the print into a pleasing brown, and at the same time the print became more translucent, almost as though wetted with weak spirit, then the brown gradually changed into purple and purple-blue, and at the end of five minutes the prints were removed, drained, pressed gently between blotting paper, and placed in a dish of clean water; toning, however, still continued slightly. Six changes of water were given in half an hour, and the prints then hung up to dry. The temperature of the bath was 44° F. Its action was decidedly too rapid to control with any number of prints; the gelatine was rather soft, but not more so than with the original formula. The final tone of the prints is blackish-violet, with an intense pink ground, and the effect anything but pleasing.

EXPT. No. 3.—The next bath tried was that recommended by Liesegang:—

ORIGINAL.		NEW.	
Hyposulphite of soda	200 gram.	Magnesium chloride	200 gram.
Ammonium sulpho-			
cyanide ...	25 "	... "	25 "
Sodium acetate ...	37 "	... "	37 "
Saturated solution of			
alum ...	50 c.cm.	omitted	
Distilled water ...	800 "	... 800 c.cm.	
Add—		Add immediately—	
Silver nitrate ...	2 gram.	Chloride of gold...	1 gram.
Sodium chloride ...	2 "	Ammonium chlo-	
Water ...	3 c.cm.	ride ...	2 gram.
Leave for twenty-four hours, and		Distilled water ...	200 c.cm.
add—		The gold solution was rendered	
Chloride of gold...	1 gram.	distinctly alkaline by bicar-	
Ammonium chlo-		bonate of soda.	
ride ...	2 "		
Distilled water ...	200 c.cm.		

The prints were placed in this new bath unwashed, and in 75 seconds they had assumed a sepia-brown colour, which gradually turned in eight minutes to a rich purple—the prints were then drained, washed once, and hung up to dry. The final tones are the same as in No. 2 Expt.

The addition of 50 c.cm. of saturated solution of alum to the new bath caused strong effervescence and the separation of a curdy precipitate. When this was filtered out and the bath used, the prints placed in it turned slowly to the characteristic yellow colour assumed by all chloride prints when immersed in these toning and fixing baths, and the print ran the ordinary gamut of colour, from yellow to brown and purple.



EXPT. No. 5.—The next bath tried was that recommended by Liesegang, in "Anthony's International Bulletin for 1889":—

ORIGINAL.		NEW.	
Sol. A.		Sol. A.	
Chloride of gold	1 gram.	...	1 gram.
Distilled water	100 c.cm.	...	100 c.cm.
Sol. B.		Sol. B.	
Ammonium sulpho-			
cyanide	4 gram.	...	4 gram.
Common salt	16 "	...	16 "
Alum	8 "	omitted	
Hyposulphite of soda	60 "	Magnesium chloride	60 "
Distilled water	400 c.cm.	...	400 c.cm.
Allow to stand eight days, and filter.		Not allowed to stand.	

#### THE TONING BATH.

Sol. A.	...	...	...	...	7 c.cm.
Sol. B.	...	...	...	...	60 "

The original directions also state, "Add 40 c.cm. of old used combined toning and fixing bath." The prints were placed in this bath at once, unwashed, and again toned to a rich purplish-black, and were then treated as described above with six changes of water. The papers used in the above experiments were Liesegang's, Obernetter's, Talbot's, "Beta," and "Delta," and Celerotype, and with all very fine purplish tones were obtained, and in no case were brown tones possibly reached, except when using alum in the baths, though perhaps the use of much weaker solutions might effect this. The variation in tones was slight; certainly it could not be stated that any of the above baths gave one particular tone, and all the papers required about the same time to tone.

EXPT. No. 6.—The following experiments were then made to see whether any sensitive silver salt was still in the prints. Half of each print was covered with black paper, and then a thickness of red, and then a thickness of yellow, and exposed during a whole day to the light. Some prints were also made on similar but unused paper, to see whether the light was sufficiently strong to affect the paper, and three well printed out copies were obtained from one negative. The following results were obtained on the toned prints. Those parts of the prints exposed to light were considerably darker than the covered parts, and this was particularly noticeable with the prints toned in Expts. Nos. 2 and 5, and there is not the slightest doubt that the darkening was due to chloride of silver left in the film.

The action of washing the prints prior to toning was tried, and, as expected, with better results, as the free silver nitrate was thoroughly removed, and there was left merely the chloride of silver unaffected by light, for removal by the chloride of magnesium.

The deductions which, I think, are to be drawn from these experiments are, first, that replacing hypo in the combined toning and fixing bath with magnesium chloride is by no means satisfactory; secondly, inferior tones are obtained with the new baths, as made above; thirdly, the baths must be much weaker in gold and stronger in magnesium chloride before the prints may be assumed to be permanent.

If I might, I would suggest as a field for experiment to anyone taking up this subject the modification of the above formula in the direction stated, viz., reduction of the gold and increase of the new fixing salt, and also the application of a fixing bath of magnesium chloride before or after toning.

The temperature and concentration of the solution of magnesium chloride have an enormous influence on the solvent power, as 5 grammes of freshly precipitated chloride of silver are entirely dissolved by a boiling saturated solution of 300 grammes of magnesium chloride, and on cooling or dilution with water, the greatest part of the dissolved

salt is again precipitated. This was no more than I expected, as it is a fact which has been previously noted by many observers in the early days of photography. I must finally confess that till more extended and accurate experiments are made, the use of magnesium chloride as a fixing agent is, in my opinion, a retrograde step, though possibly, in the face of new facts and formulæ, this opinion may need modification. Magnesium chloride might be of service for fixing so-called matt-surface paper. I may perhaps be allowed to call attention to a paragraph in the "Dictionary of Photography," first edition, p. 70, under "Fixing:" "The author, in conjunction with an amateur photographer, has been engaged for some time in experiments as to a new fixing salt, and although these are not complete, fair hope is given that at no distant date a new fixing agent will take the place of hypo, equally as efficacious and yet much more amenable to reason." This salt which we were then trying was a chloride—but not magnesium—but further experiments proved that the temperature and strength of the solution had such enormous influences on the solvent power as to render it useless for practical work, because, like magnesium chloride, a solution of certain strength, say, for instance, 15 or 20 per cent. solution, would dissolve chloride of silver easily, but, on washing the print, which would necessarily entail a dilution of the solution in the film, some chloride of silver was precipitated, and the experiments were abandoned as useless.

Two statements which have been made about the new fixing bath now remain to be considered. The first is that there is no loss of tone; the second that the prints do not require washing afterwards. Two pieces of gelatino-chloride emulsion paper from a fresh packet were placed in the fixing-bath, and kept in motion for half an hour, then hung up to dry. As I now write, these pieces of paper are still hanging on the line, and in three days, or seventy-two hours, the gelatine film is yet sufficiently tacky to stick closely to the fingers when the same are pressed on them. This disposes of the second claim, and in the face of the fact that magnesium chloride is a deliquescent salt, I fail to see how this can be substantiated. The first, as to no loss of tone, I admit, but the tones obtained, as I have already said, are inferior to those with the usual baths.



#### HUNTER'S "LITTLE GIANT" ROCKER.

THIS clockwork rocker, which will run for half an hour with one winding, is made on an entirely new principle. Instead of the usual see-saw motion, the dish is, so to speak,

oscillated in a horizontal position. The advantage of this new movement over the older one is that the developer receives not only a wave motion, but a circulatory one, and practically no portion of the fluid comes on the same part of the plate twice in succession. The box of the rocker occupies



7 in. by 5 in., but it will carry a dish, if light, up to 15 in. by 12 in. The speed of the motion can be easily regulated by the position in which the dish is placed. The price is only 13s. 6d.

Mr. Hunter also showed us a new serrated Vignetting Screen in black cardboard, which is of very convenient form, and sold in shilling packets of quarter, half, and whole plate. Their "Duplex" Roller Squeegee is a good idea. It consists of two indiarubber rollers, mounted parallel, and both acting on the print at the same time, so that a firm, steady pressure can be given without the usual tendency to drive the print off at an angle.



## Our Contemporaries.

*Anthony's Photographic Bulletin* gives the following:—"A combined developer of pyro and hydroquinone is recommended by Dr. C. Schleussner, of Germany, made as follows, which is said to give fine results:

SOLUTION A.				
Hydroquinone	..	..	..	20 grams.
Distilled water	..	..	..	2000 c.c.
SOLUTION B.				
Carbonate of potassium	..	..	..	100 grams.
Distilled water	..	..	..	500 c.c.
SOLUTION C.				
Distilled water	..	..	..	400 c.c.
Sodium sulphite	..	..	..	60 grams.
Diluted sulphuric acid	..	..	..	10 to 20 drops.
Pyrogallol	..	..	..	20 grams.

For use, combine 40 parts of solution A with 10 parts each of solutions B and C, starting development with an old mixture, replacing it by fresh, as development proceeds."

The *American Journal of Photography*, says, "Captain Pizzighelli gives the following formula of a developer for transparencies: A, Dissolve 39 grammes of citric acid in 135 c.c. of water, and neutralize with aqueous ammonia. Should too much ammonia be used, it must be removed with the aid of heat. Then add 26 grammes of citric acid, and the solution is diluted so as to make 270 c.c. B, Solution of ferrous sulphate, 1.3, slightly acidified with sulphuric acid to prevent its oxidation. C, Solution of chloride of sodium, 1.30. To develop, take A, 10 parts; B, 5 parts; C, 1 part. Chloride of sodium is a powerful restrainer, and should be used with care. Sulphate of iron in a larger proportion than that indicated retards development. By diluting the developer we obtain prints that are soft and of less intensity. Gallic acid as an accelerator. It produces sepia tones. To the above solution we may add two and a half parts of a solution of gallic acid at one per cent. By this process we are certain to produce excellent transparencies."

*Wilson's Photographic Magazine* says, "But patient and persevering as one must be to get together the materials for a picture, the ability to use them properly is vastly more important. Hammerton says art is selection; and this is especially true of those who work by means of photography. To know what to select and what to avoid, is the beginning of wisdom in the making of a picture. A knowledge of art principles, and a feeling for art values, must be and abide with us, or we strive to compose in vain. And yet, while we seek for breadth of light and shade, to have all accessory effects in a minor key, and to properly emphasize the focal interest of the picture, a too strict observance of rule betrays itself, and contributes to a stiff and unsatisfactory result. It has the same air as a person who is unaccustomed to the usages of society, and is trying to lay his course by a book of etiquette carried in the pocket. But one must first have a familiar acquaintance with rules of art before he can intelligently and gracefully disregard them, even to that slight degree which is sometimes an advantage. The nature of the subject must frequently lead to the modifying of exact rules."

The *St. Louis and Canadian Photographer* quotes the following:—"A discovery has recently been made which promises to revolutionise the process of etching, especially in photogravure. The drawing is traced, as usual, on a plate of zinc, either by an artist or by photography, with any suitable ground. This plate, backed with asphaltum, is laid in a bath of dilute acid. It is then put in circuit with a dynamo, the other pole being merely placed in the acid. When the current is allowed to pass, the acid attacks the metal with great rapidity, and a few minutes will suffice to bite the plate, and the depth of the etching can be regulated with mathematical accuracy, while after the old fashion, the surface becomes covered with the film of hydrogen or with a number of minute bubbles, which prevent an effect unless the plate be incessantly rocked or brushed. The discoverer, whose name is withheld, reasons that in the electric etching the action of the acid is due to a depolarisation of the metal surface."

The *Photographic Herald and Sportsman* gives the following hints on "Burnishing":—"Never allow the mounted prints to become bone-dry. Keep them between blotting paper till bur-

nishing time arrives. This plan has the following advantages: The mountant will sufficiently dry, and at the same time the mount will retain the moisture necessary to make it pliable under pressure, the print itself will be thoroughly protected from dust and grit, which might otherwise be ground into it. The lubricant in general use is white Castile soap, which is applied by rubbing the cake of soap with a tuft of cotton or flannel, and then rubbing the face of print a couple of times with the soaped material. This is the dry method. Some burnishers prefer dissolving the soap in alcohol (three or four grains to one ounce of alcohol), which is applied in the same manner, but takes a few minutes to dry, whilst with the dry soap you can run a print through immediately. Inspect and clean your burnisher before applying heat. See that the polished surface is free from scratches, and if not, proceed with fine emery paper to eradicate same, always rubbing back and forth, with the length of the burnisher, as the scratches run across, or at right angles to the length, and are due generally to grit picked up by the damp print and carried through with it. Heat your burnisher thoroughly at the start, and remove the water which collects on the roller, the same being due to condensation from the atmosphere. It is a capital plan to run an old or rejected print through to test the burnisher when you have it thoroughly heated, and note the result. If with a good pressure there is a lack of polish, the burnisher is not hot enough. If the print scorches, it is too hot, reduce the heat. When you procure the results you require, keep the heat steady. In running prints through, it is advisable to run them from one side only, and not back and forth, and in burnishing, say, a five by eight print, run it through the narrow way first, giving it as it goes through a bend backwards from the print, then bring it over the burnisher and run it through again the narrow way, but this time run the opposite end through first, and bend as before. Now run it through twice the broad way, but do not put but a slight curl on it; and you have, if everything works all right, a nicely burnished print. In burnishing, always give the curl that is the final bend in the direction of the longest side of the mount."

*Engineering* recently published an article on the steamer *Puritan*, which is to run on the Fall River line, illustrated by nine fine process-block reproductions of magnificent views of the interior of the vessel.

## Notes from Paris.

At the last meeting of the Academie des Sciences two novelties, both connected with photography, were exhibited. One of these was a new camera for instantaneous photographs. It was claimed by the inventor that the machine could take fifty photographs a second. In proof of this assertion he exhibited a series of pictures showing two men fencing. In one case one of the combatants had been disarmed, and before the foil touched the ground the camera had taken no less than eight pictures of it.

At the same meeting, M. Lippmann, who has been engaged for some years past on experiments on "nature-coloured" photographs, showed several pictures of the spectrum of light. In most of these the seven colours were clearly defined and well coloured. The details of the process were not made known, but were reserved for another occasion, when the inventor also promised to exhibit some photographs of stained-glass windows.

Another new form of hand-camera is called the "Photo-Album." In outward appearance it closely resembles—as its name would imply—a photograph album bound in leather, and closed with a wire loop. When this is undone and the book opened, it forms a triangular-shaped dark chamber. The objective is placed in the centre of the back of the book, and this back is made movable to allow of focussing. The Photo-Album weighs 19 oz. It measures, when closed, 7 by 5 by 1½ in. in thickness, and can be conveniently slipped into the pocket of a great coat. It can be made ready for use in a few seconds. The price is £5.

The Photographer's Compass, the invention of M de Coudon, is a very handy little instrument, likely to be very useful to amateurs on photographic excursions. It is a small compass, so small, indeed, that it can be worn as a charm on the watch chain. Half of the face is covered by a fixed plate. Only the four cardinal points are marked on the card, the intermediate spaces being marked with lines and figures denoting the hour of the day. A photographer, who wishes to know the most suitable







## Exhibitions.

### DUDLEY GALLERY ART SOCIETY.

A PARTICULARLY cheerful exhibition of water-colour paintings by the artists who form the Dudley Gallery Art Society are now on view at the Egyptian Hall. The reference by a prominent politician to the pleasures of his "ain fire-side" finds apt interpretation in Mrs. R. Hussey Freke's "When Life is O'er" (8). The drawings by Miss E. E. Dell all manifest delicacy; particularly is this evident in a picture to which a quotation from Keats is attached (14). We do not recollect having seen the sea with such a hue as that depicted by Mr. A. Webb in "A Breezy Day" (15). Mr. W. R. Stevens must be congratulated on the Turner-esque effect in "On the Scheldt" (23). The view "Near Eaton Hall" (39) is well chosen. Mr. Donne is very accurate in depicting the "Snow and Mist on the Slopes of the Jungfrau" (47). In Mr. R. A. K. Marshall's "Evening on the Usk" (53) there is a charming atmosphere which deserves high praise. In "Craft Entering Port" (67), Mr. F. J. Aldridge exhibits much ability. Mr. A. Stevens is fortunate in the "Waterlily Pool" (72), which, however, appears to us to be rather flat in its treatment. "All in a Garden Fair" (77), by Mr. F. Coleridge, who sends twelve pictures, is very happy. Miss Helen O'Hara must be congratulated on her skill as shown in "The Golden Evening Brightness of the West" (94). Miss Manby's "Rebekah" (99) is successful. In "Clouds and Sunshine" (108), Mr. W. J. Ferguson shows excellent perception of the difficulties of landscape. Miss Manby is very happy in "Sweet Seventeen" (132). This "Child's Faec" (148), by Mr. E. Taylor, is beautifully drawn. This gentleman succeeds, also, in "A Penny for your Thoughts" (194). The President of the Society, Mr. Walter Severn, shows all his well-known artistic ability in a view of Lake Como (154). The sunshine effect which Mr. Coleridge has infused into "Streatley-on-Thames" (166) adds greatly to the beauty of the picture. "A Mild Winter's Day" (185), by Mr. W. R. Stevens, would win the commendation of photographers who favour impressionism. Other examples for them may be found in Mrs. Heathcote's "Sunset and Evening Star" (288), and Mr. R. Jones's "Faversham Fog" (307). Mr. Goddard gives a capital view of the "Junction of the Bure and the Yare" (197), and Mr. E. W. Cook's "Loch Achray" (203) is admirable. The fleecy clouds which Mr. G. S. Walters depicts in "Summer Evening, Holland" (253), shows much felicity of treatment. Mr. Severn's "Loch Fyne Fishing Boats" (320) deserves high praise. The exhibition, which includes the work of eighty-seven artists, is interesting, and is well worth a visit.

## Societies' Meetings.

**Brechin.**—The ordinary monthly meeting was held on the 3rd inst., Bailie Lawrence, Vice-president, in the chair. After some preliminary business, Mr. George Mackie, one of the Vice-presidents, gave a practical demonstration of "Making Lantern Slides by the Wet Collodion Process." A slide was made by contact, after being allowed to get surface dry, and a mat placed between it and the negative. Thereafter another slide was made by reduction from a  $\frac{1}{2}$ -pl. negative. The contact slide was exposed to a gas flame, but magnesium was used for the reduced one. Both were very successful. Fifty slides, sent for exchange by the Paisley Society, were then exhibited by means of the lantern.

**Cardiff.**—At a meeting on the 6th inst., Mr. John Storrie, the Curator of the Cardiff Museum, gave a practical demonstration on "Microscopical Photography." The lecture was of peculiar interest to those interested in geology; it being shown how the difference in the value of light when polarised enables clearer photos to be obtained than under ordinary light, of crystalline objects. Examples of this scientific branch of photography, dating back to 1851, were passed round for inspection. These examples were the earliest productions of any real value. In response to a vote of thanks, Mr. Storrie intimated that on the 13th March he would give a lecture on "Insect Life," or photo-micros illustrated with the lantern.

**Cambridge.**—A meeting was held on the 2nd inst. Matters of photographic interest were discussed, and arrangements to hold a "practical enlarging" class were proposed for the next meeting.

**Croydon.**—An ordinary meeting of the Microscopical and Natural History Club (Photographic Section) was held on the 6th inst., Mr. John Weir-Brown in the chair. Mr. J. Howson gave a very interesting demonstration on "Bromide and Alpha-Papers." Several members took part in a discussion which followed. This is the first

demonstration of the kind that has been given in their newly-acquired dark-room, and the crowded and appreciative audience tended to show that it was a decided success.

**Ealing.**—The meeting was held on the 5th inst., when the chair was taken by the President (Mr. H. W. Peal). The President announced the gift to the Society of a cabinet for storing their books, etc.; he also presented several books. Mr. W. E. Wright showed some very fine negatives taken on films and developed with eikonogen, six grains to the ounce. Mr. Whiting exhibited three shutters, both for time and instantaneous exposures, of his own manufacture, and also a broken negative, with a print from it after it had been repaired, the print not having the least trace of any defect. Dr. Clifford Gibbons showed a developing dish which he used for films, and entirely prevented them cockling. Mr. Winter, from Messrs. Mawson and Swan, exhibited two camera stands, and also a hand-camera made in Holland, which he explained to the members. The President showed a new stand for supporting flash lamps so as to reduce the trouble in placing them. The next meeting of the Society will be on the 19th inst., when the AMATEUR PHOTOGRAPHER prize slides, 1890, will be exhibited by the optical lantern.

**Haltwhistle.**—The annual meeting was held on the 2nd inst., Dr. Speirs in the chair. The Treasurer's account for expenditure during the year 1890 having been read, it was resolved that the amount be apportioned equally among the members. The office-bearers elected for the current year are—Mr. Edward Joicey, Blenkinsopp Hall, President; Dr. Speirs, Vice-president; and Mr. David Macadam, Honorary Secretary (who also acts as Treasurer). The rules were gone through and altered, and ordered to be printed. The subscriptions for the year were fixed as follows: Ordinary members, 5s.; honorary members, gentlemen, 7s. 6d., ladies, 5s., double ticket, 10s. 6d. Five honorary members were proposed and accepted. After the business was completed, honorary members and friends joined the meeting to inspect an exhibition of photographs entitled "Inland Scenery," lent by the Editor of the AMATEUR PHOTOGRAPHER. The prints were tastefully arranged round the room, and afforded a great deal of pleasure.

**Huddersfield.**—A special meeting was held on the 4th inst., when the stereoscopic prize slides, kindly lent by the Editor of the AMATEUR PHOTOGRAPHER, were placed before the members, and greatly admired. The set which took the second prize were very fine, the opinion generally expressed at the meeting being that if they had been transparencies they would have been perfection.

**Leeds.**—At a meeting on the 5th inst., the President, Mr. Godfrey Bingley, in the chair, Mr. C. H. Bothamley, F.I.C., F.C.S., delivered a lecture, entitled "A Good and Bad Photograph." In introducing the subject, Mr. Bothamley referred to the absolute necessity for every photographer making himself acquainted with the leading rules of art, and in a very clear and interesting manner Mr. Bothamley pointed out the necessity of the rules of composition and light and shade, illustrating his remarks by diagrams on the black board and a large number of clever lantern slides. At the close of the lecture a vote of thanks to Mr. T. W. Thornton, the retiring President, was heartily accorded.

**Lewisham High Road.**—An ordinary meeting was held on the 4th inst., Mr. Alfred H. Miles in the chair. The Secretary read a paper on "Toning and Printing," showing several chemical experiments, and demonstrating the use of the salt toning bath.

**Leyburn.**—At the meeting of the Leyburn Literary and Scientific Society, on the 6th inst., the Hon. J. C. Dundas in the chair, a paper on "Instantaneous Photography" was read by the Rev. A. Kelly, with lantern illustrations. The lantern was worked by the Rev. F. W. Stow, Vicar of Aysgarth, an AMATEUR PHOTOGRAPHER medallist, and the slides exhibited were by the Rev. F. W. Stow, Rev. A. Kelly, Mr. H. Knight, of Middleham, and Mr. B. Smithson.

**Newcastle-on-Tyne.**—On the 6th inst the AMATEUR PHOTOGRAPHER 1890 Prize Competition Slides were exhibited in the lecture hall of the Literary and Philosophical Institute before a large and appreciative audience, numbering about 700. Mr. J. P. Gibson occupied the chair and described the slides, whilst the lantern was under the experienced management of Mr. Ridgway, who, using the ether saturator, got as usual a brilliant light. The slides gave great satisfaction to the large audience, the sets by Messrs. Gratschieff, Austin, and Wade coming in for most admiration, the first-named in particular being warmly applauded.

**North Middlesex.**—The last meeting was held on the 9th inst. Mr. Walker (in the chair) said the subject for the evening was "The Best Treatment of Winter and Snow Scenes." He thought that views in which there were no heavy objects in the foreground were best, and a developer weak in the reducing agent most suitable. Messrs. Mummery, Norris, Beadle, Gill, Goodlew, and the Secretary passed negatives and prints round for inspection and gave their methods of working. Mr. Norris had given 15 to 20 secs. with large stop, and developed with full strength pyro and ammonia. Mr. Beadle had given 15 sec. with  $\frac{1}{32}$  on a hoar-frost view, and developed with pyro Ilford formula used full strength.



Mr. Gill showed some instantaneous pictures of figures in snow scenes taken at 8.30 a.m. in December. Referring to the widely-different exposures, Mr. Cox had seen negatives taken under similar conditions, but with exposures varying from four seconds to five minutes, yield equal results in the hands of an experienced developer. Mr. Goodhew recommended, in cases of great contrast, as in snow scenes, that the plate should be flooded with the ammonia and bromide, and the pyro added by drops till the image appeared. The Secretary had used eikonogen and ammonia with meta-bisulphite, as suggested by Mr. Secretan. Mr. Pither had failed to get density with the weak pyro method. Mr. Gill showed two hand-cameras of his own invention.

**North London.**—At the meeting on the 3rd inst., Rev. E. Healy in the chair, Mr. Bishop showed a specimen of excellent varnish which he had prepared, suitable either for negatives or positives. It consisted of amber dissolved in chloroform. Mr. Coventon asked whether, in making bromide prints, it was better to have a bright light and keep the negative at a distance suitable to its density, or to use a smaller and less powerful light according to the negative. The Chairman said that doubtless it was best to use a standard light for everything, and remove the negative, if necessary, to a greater distance. Mr. Tanner said that he covered the negative with tissue paper when necessary, and removed it to a suitable distance. Mr. George A. Powell asked whether the commercial ferrotype dry plates were sensitive enough to get good results from flash-light exposures, and whether the usual oxy-hydrogen lime-light would be powerful enough for these plates, and whether there would be any difference between the exposure of these dry plates and, say, Ilford ordinary. Mr. Hart said that the lime-light, as commonly used, was no good, and Mr. Powell would find that he could take excellent wet collodion positives on glass by flash-light exposure. Mr. Coventon asked what was the best plan for preventing halation without backing the plates with any substance, which was troublesome to clean off again before developing. Mr. Tanner said that he backed his plates with red paper smeared with glycerine, as this was easily removable by slight soaking. Mr. Grover had found that Thomas's thick-coated plates answered well without backing. Mr. Oakley said that he could generally remove most of the halation by rubbing down with a piece of soft cork dipped in methylated spirit; he did not believe there was any specific against halation, which, in his opinion, was due to local over-exposure.

**Richmond.**—This Society, whose numbers are steadily increasing, has now started weekly meetings (instead of fortnightly as hitherto) at the Greyhound Hotel, a more central and convenient location than their former quarters. The first meeting under the new arrangement took place on the 6th inst., a lantern night, when slides by Messrs. Hunter, Faulkner, Richardson, Ardaseer, and Cembrano were shown and discussed; those of the last-named gentleman, a series of views in Chester and North Wales taken during last year's Photographic Convention, being specially admired for their technical and artistic excellence. On Monday the 16th, Major J. Fortuné Nott, President of the Society, will give a lecture with lantern illustrations on "Wild Animals in Captivity," at 8 p.m., in the lecture hall, Hill Street.

**Sheffield.**—The annual meeting of this Camera Club was held on the 28th ult. The report of the Secretary on the working of the Club during the past year was exceedingly satisfactory. The following were elected as officers for the ensuing year: President, Mr. G. T. Newsholme, F.C.S.; Vice Presidents, Dr. T. H. Morton and Mr. H. J. Rawson; Hon. Secretary, Mr. G. E. Maleham; Treasurer, Mr. B. W. Wirider; Council, Prof. J. O. Arnold, F.C.S., Drs. J. A. Munton and E. Skinner, Messrs. Wm. Gilley, junr., A. Copley, and P. Slater.

**Sheffield.**—The ordinary monthly meeting of the Photographic Society was held on the 3rd inst., Mr. B. J. Taylor in the chair; when, after the election of new members, a lantern exhibition was given.

**Stockton.**—The Society is increasing in numbers and importance. So much so, that, instead of meeting periodically in the Lit. and Phil. Hall in the Exchange, the old Masonic Room in Masons' Court has been secured for the general use of the Society and its members. A dark-room has been fitted up, and every facility is afforded to those who desire to acquire proficiency in this delightful art. The members and friends had a pleasant reunion in the Freemasons' Hall on Tuesday the 3rd inst. Between 200 and 300 photographs taken by the members were on view, as were also a number of stereoscopic slides, the work of Dr. Stainthorpe, Mr. Ellam, and Councillor Graham. During the evening, Mr. Moulthrew a number of lantern slides—chiefly rural scenery and rural objects taken by the members—on to a large screen. The evening was diversified with a programme of very agreeable music by Mr. Woolman's band. A very interesting programme has been arranged for the season, which consists of monthly photographic competitions, excursions twice a month; and at the end of the season nine medals are offered for competition (amongst members only) by the Council. Mr. Ellam of Yarm, the Secretary, has also kindly promised to assist any beginners joining the Society.

**South London.**—At the meeting on the 6th inst. there was a demonstration on "Enlarging" by Mr. S. Wiles, using bromide paper prepared by himself. In the opinion of the members, the paper was fully equal to the brands at present in general use, giving plenty of detail without hardness, the general tone being that of a good platinotype, from which the results were scarcely distinguishable. Members' attention is called to the lantern night on February 20th.

**Sydenham.**—An ordinary meeting was held on the 3rd inst., Mr. Thomas W. Rumble in the chair. After the usual business, the Hon. Sec. (Mr. H. H. Gray) read a paper on "Lantern Slides." Having given a general description of lantern slide making by contact and reduction, he brought before the notice of the members Beach single solution Eikonogen developer, and passed round a set of slides developed by this formula. These slides showed good detail in the shadows and clear glass in the high lights. A vote of condolence with the President was passed, he being still too unwell to attend the meeting. The next meeting will be held at the same place on Tuesday, February 17th.

**Sutton.**—The ordinary meeting was held on the 3rd inst., the President (Mr. De Clifford) being in the chair. After the transaction of the usual business, Mr. Baker, of Wallington, exhibited a simple but ingenious arrangement for cutting prints to any vertical line. It promises to be a useful addition to our photographic accessories. An interesting hour was then spent in inspecting the monthly competition prints (genre and figure studies) kindly lent by the Editor of the AMATEUR PHOTOGRAPHER. The next meeting will take place on March 3rd, when the rules for the monthly prize competitions will be discussed and re-arranged.

**Utttoxeter.**—This Association held a very successful conversazione, exhibition of work and lantern slides on the 29th ult. Some excellent photographs were shown by the Vice-President (the Rev. C. F. Lowry Barnwell), and by Messrs. A. Parker, R. Hardy, Bamford, Walker, H. Meynell, and R. Ainsworth. Through the courtesy of the Editor of the AMATEUR PHOTOGRAPHER, No. 18 set "Inland Scenery" competition photographs were exhibited. Mr. R. Keene, Derby, also kindly sent a fine collection of platinotypes, which were much admired. In the interval refreshments were provided. A number of interesting slides of Boston, U.S., kindly lent by the Liverpool Photographers' Society, were then thrown on the screen, and this concluded a very pleasant and successful initial effort of this young but promising Association. On Wednesday evening, February 4th, the annual meeting was held at the Society's rooms, Carter Street, Utttoxeter, when the whole of last year's officers were re-elected, and the excursions for the coming season were selected.

**West Kent.**—At the meeting held on the 4th inst., the Vice-President (Mr. A. R. Dresser) in the chair, the adjourned discussion on Mr. Dresser's motion at the previous meeting as to any one living at a distance wishing to join the Society was again brought forward. It was proposed by Mr. Clare, and seconded by Mr. Lloyd, and carried, "That an amateur photographer, not living on the South Eastern Railway (loop line) might become a member of this Society on payment of half the subscription (5s.), with no voting power." A demonstration was then given on "Flash-Light Photography," several photographs being taken and excellent results obtained. The remainder of the evening was spent in passing through the lantern slides by Messrs. Lloyd, Court, Foy, Dresser, Jones, and Hawkins. The next meeting will be held on Wednesday, February 18th, Board Room, Bexley; Mr. Willis on "Platinum Printing."

**Wimbledon.**—At the meeting on the 6th inst., the Hon. Sec. (the Rev. H. G. Allfree) read a paper on "Photographic Printing." He reviewed the several kinds of paper now in use, with their several characteristics, and showed how serviceable the different processes of printing are for obtaining good and artistic pictures with widely different qualities of negatives. He detailed fully the separate processes of toning and finishing, and gave many useful hints for success in work. The Fry Manufacturing Company, and also the Britannia Works Company, will give practical demonstrations on February 20th and March 6th respectively, on "Bromide Enlarging" and "The Use of Alpha Paper." The Society will be happy to welcome any amateurs who may desire to be present on those evenings.

**Wigan.**—At the meeting on the 5th inst., the Rev. G. F. Wills, M.A., was unanimously elected President, and Mr. H. H. Wragg Vice-President. As the above gentlemen were both members of the Committee, the election of two others to fill the vacancies was necessitated; Messrs. J. A. E. Lowe and F. Hughes were therefore elected. The subject of "papers" was next introduced, with the result that several were promised. The President is to provide one for the next monthly meeting, the subject not being decided upon. Mr. Lowe promised one on "A Visit to Switzerland"; Mr. Varley on "Lens Making," with demonstration, etc., etc. Thursday, the 19th inst., is a lantern night. Members are therefore requested to bring a few lantern slides for exhibition.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4493. **Toning Bath.**—I use a toning bath composed as follows:

Acetate of soda ... ..	120 gr.
Carbonate of soda ... ..	5 "
Chloride of gold ... ..	5 "
Water ... ..	20 oz.

How shall I keep it up to strength? Besides adding gold, is it necessary to add the other ingredients also?—**RING**

4499. **Hand Camera v. Camera and Tripod.**—Will any amateur of experience tell me (1) For all considerations which is the better, a hand-camera or one of the ordinary type, i.e. camera and tripod? (2) If the former, would he recommend a Kodak (half-plate)? But if the latter, what make would he advise? I have hitherto used the Instantograph?—**ANAXAGORAS.**

4500. **Coloured Glass Luminous.**—I wish to know how to make coloured glass very luminous in the dark. Would it be affected by damp, and how long would it be likely to keep luminous?—**EXPERIMENT.**

4501. **Kallitype.**—Would some correspondent of the **AMATEUR PHOTOGRAPHER** with a knowledge of chemistry kindly say whether prints made by this process are likely to be permanent?—**DOUBTFUL.**

4502. **Dry Plates.**—Will some one kindly give me the names of some of the best plate makers in the United States?—**W. R. P.**

4503. **Fog.**—Will some one kindly tell me why a print, taken from a negative which does not appear fogged either by reflected or transmitted light, appears hazy, and whether there is a cure for same?—**W. R. P.**

4504. **Exposure Note-Book.**—Can any one tell me whether an exposure note-book can be procured in the United States, giving exposures for the different States?—**W. R. P.**

4505. **Installments.**—Would some one kindly tell me where I can obtain photographic apparatus by payment in instalments?—**CAMERA.**

4506. **Artistic Lighting.**—Would some one kindly say how best to secure artistic lighting and position of sitter to take portraits in small greenhouse? Door into greenhouse faces north, and dead wall opposite door would probably be position of sitter, roof is glass.—**B.**

4507. **Exposure.**—What is proper exposure in sunshine for portrait outside, sitter being placed in shade, stop 32, at 12 o'clock February; also exposure, strong foreground, 12 o'clock, February, sunshine, 32 stop, flood ordinary plates?—**B.**

4508. **Flash Lamp.**—I have a Lancaster International quarter-plate camera. Is it possible to take instantaneous pictures by the aid of a flash-lamp with it? If so, could any reader inform me of a reliable cheap lamp?—**H. W. THORNTON.**

4509. **Kaleidoscope.**—Can any of your readers inform me how to make a kaleidoscope for optical lantern, describing the kind of lenses required with their focal lengths?—**SUMMERS.**

4510. **Hypo and Alum.**—Can any brother amateur give me a formula for Leisegang's combined bath, using chloride of magnesium and tannin in place of hypo and alum?—**ESBROS.**

## QUERIES UNANSWERED.

Feb. 6th.—Nos. 4478, 4479, 4491, 4492, 4493, 4495, 4498, 4491, 4492, 4495.

## ANSWERS.

4447. **Bromide Paper and Hydroquinone.**—See page 41, the **AMATEUR PHOTOGRAPHER**, January 16th, 1891.—**OSIRIS.**

4449. **Hand Camera.**—Lancaster's Rover, or the Talmer, ought to suit you, or the Optimus Magazine.—**OSIRIS.**

4453. **Enlarging.**—You will find all you want in Wall's "Dictionary of Photography."—**OSIRIS.**

4456. **Shutter.**—Lancaster's See saw Shutter, just the thing you want.—**OSIRIS.**

4457. **Oxy Benzine Light.**—Full information will be found in the "British Journal Almanack, 1890," page 401.—**OSIRIS.**

4483. **Photo-Mechanical.**—Wilkinson's "Collo-type and Photo-Engraving," new edition, price 5s.; and Schnauss' "Collo-types and Photo-Lithography," 5s.; both to be had from Messrs. Hazell, Watson, and Viney. Collotype is the best process.—**OSIRIS.**

4471. **French Scientific and Optical Instruments.**—Perken, Son, and Rayment, 99, Hatton Garden, would help you in any way.—**OSIRIS.**

4480. **Eastman's Transparent Films.**—To develop six or more quarter-plate negatives in one dish, proceed in this way. Take a 10 by 8 porcelain dish, pour in 6 oz. developer, have by your side a clean bowl of clean water. Cut off at indicator, mark not more than three feet of film, take hold of this at each extreme end with thumb and finger of each hand, get the right-hand end well under the water in bowl, drawing it quite through from end to end until limp, drain for one second, then proceed in the same way through the developer, making quite sure the film gets evenly covered in every part until you can just see where to divide the pictures; then pass again through the same water as before, to stay the development while you separate with scissors into negatives, then put the separated negatives, all of them, back into the developer to finish; wash and fix in the usual way. You must not use the same developer for a second batch. If for six negatives only, 4 oz. of developer in a 7 by 8 dish would be quite sufficient.—**H. S. LARGE.**

4484. **Celluloid Films.**—Fry's celluloid films are excellent in every respect. "Lizzie" should try the exposure before starting on her tour, as the "60 time" film is not nearly so rapid as its title suggests, but is very suitable for landscape work. Care must be taken to keep the films quite flat in the slides.—**MELCHIOR.**

4484. **Celluloid Films.**—I took a quantity of England's ordinary celluloid films abroad with me last autumn, and found them work remarkably well. I have no experience of any other films except Eastman's rollable ones. These would require a roll-holder to be attached to the camera.—**C. E. F.**

4484. **Celluloid Films.**—"Lizzie" will find the films made by Mr. Fitch, 31, Angel Road, Brixton, answer her purpose in every way and a most perfect film.—**J. E. ELLAM.**

4484. **Celluloid Films.**—England's are most satisfactory, perfect in coating, and altogether the best I have used.—**WM. MAYLAND.**

4484. **Celluloid Films.**—I can recommend Fry's celluloid films as thoroughly reliable.—**D. NICOL.**

4486. **Instantaneous Photographs.**—I can thoroughly recommend Crouch's Presto hand-camera (not Frank's), which is fitted with one of his single lenses. I would advise "Initium" to call or send to 66, Barbican for specimens. This lens is a marvel. I took a splendid negative of a church (5 sec., f/16) at 7.30 a.m. last month, all lines in perfect perspective and wonderfully sharp.—**SARACEN.**

4486. **Instantaneous Photographs.**—Certainly instantaneous photographs can be got by a single lens, but it is better to use a rapid rectilinear.—**D. NICOL.**

4487. **Sodium Hyposulphite.**—One ounce of water will dissolve two-thirds of an ounce of sodium hyposulphite; *vide* table of solubilities at end of Annuals.—**J. VERREKER.**

4489. **Fixed-Focus Lens.**—I would recommend you to get one of Messrs. Taylor, Taylor, and Hobson's detective lenses. Their address is Slate Street Works, Leicester.—**D. NICOL.**

4490. **Rever. al.**—I should say that "E. T. R." has accidentally put the glass side of the plate next to the lens instead of the film side. He can print all right from the negative by using the single transfer carbon process.—**J. G. P. VERREKER.**

4490. **Reversal.**—You probably had your plate wrong-side out in the dark-slide, so that the picture was taken through the glass and not direct on to the film. In future, be careful to have the films outwards.—**TE WIRIMU.**

4493. **Platinotype.**—If "H. I. C." is using the hot-bath process, his paper has, no doubt, got damp. Does he place a sheet of india-rubber or waterproof paper between his paper and the pad in the printing frame? or is his chloride of calcium in the tube soft and damp? If so, he must take it out of its bag and dry it in a shovel over the fire and replace it. If this will not explain it and he cannot get pure whites, his paper is probably spoilt by age.—**J. G. P. VERREKER.**

4493. **Platinotype.**—Let "H. I. C." examine his negative carefully. If this is good and sharp it ought to give good prints, either platinotype or silver, but if it is not perfectly so, probably silver

prints obtained from it would appear somewhat clearer and better than platinotype.—**G. E. F.**

4494. **Shutter.**—Kershaw's "Blind" shutter is a thoroughly reliable and efficient shutter, and one which gives general satisfaction.—**D. NICOL.**

4496. **South Africa.**—I would advise "Nemo" to take whatever plates, developer, and lens he has been used to. I lately revisited South Africa with a camera, taking with me Paget's xxxxx. These all came out too thin, owing, as I afterwards proved, to the unsuitability of the hydroquinone developer I used. Previously I had always used pyro, but took hydro as being more portable. Unfortunately, they were all spoilt in intensification, owing, I have no doubt, to the presence of some deleterious substance in the water I used. I got some Mawson and Swan's Castle negatives in Pietermaritzburg, and they made fair negatives, but the best were on a few Vergara films I had. These are not made now, which is a pity, as they were excellent. I believe the actual best plates are Paget's xxx, and Thomas' landscape. I used an Optimus Euryscope, an old Dallmeyer meniscus, and a wide-angle of French make. I believe the single lens is the best. The light in Africa varies a good deal, but in spring (September and October) is intensely actinic. If "Nemo" is going to Mashonaland he will find it especially so, but in the valley of the Zambesi it is very hazy. As for paper, he had better take out some rolls of albumenised or plain paper, and sensitise it himself. No paper will keep long. I found Pizzighelli platinum so curiously affected that it printed out, the acid bath acted as a developer, and blackened the paper all over instantaneously; if printed, until in a faint outline was visible the bath developed it to a fair print. Bromide papers keep best in a tin case.—**G. LACY.**

4497. **Machine for Enlarging Drawings.**—The apparatus for enlarging (or reducing) drawings by rubber sheet is used by lithographers (many of them in this country) where work on a stone can be transferred to the rubber (previously coated with composition). The rubber is then expanded, and when transfer is stretched to required size, transferred to stone (while expanded). If enlargement is too great for one expansion, it can be repeated several times, the image being transferred to stone after each expansion. With enlargements the faults of any transfer are magnified, the reverse being the case when the drawings are reduced. Very beautiful results are obtained when reducing, the work being in very fine lines. Unless the machine can, however, be kept in use daily, for small sizes it is just as cheap and very much handier to use photo-lithography. Agents in this country—**B. Winstone and Son, 100, Shoe Lane, London, E.C.—STAG.**

4497. **Machine for Enlarging Drawings.**—If "Istriel" will apply to **B. Winstone and Son, 100, Shoe Lane, Fleet Street, E.C.**, they will give him full particulars.—**TURNER.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us **BEFORE TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT:**

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**HENRY WILES.**—We do not quite understand what you require to do. Please write fully, and we will then endeavour to help you.

**B. NELSON.**—Wash your negatives well, then bleach in solution of mercuric chloride, wash well, and flood with a 10 per cent. solution of Schlippe's salt (sulphatimonite of soda).

**F. O. KERDEL.**—The negative is over-exposed and under-developed, the plate should be nearly black before removing from the developer. The print is under-printed and over-toned; for a veritable first attempt, however, it is good. Let us see some more work in a month.

**T. HALL.**—You must expect a few "spoilt negatives" at first. We shall be very pleased to help you as far as we possibly can. (1) The apparatus named will, with competent hands, turn out good work. (2) You must, before giving any details of exposure, find out the ratio aperture of your lens diaphragms (see **AMATEUR PHOTOGRAPHER**, January 16th). Still, as to your prints. (1) Over-exposed and fogged in developing. (2) Not sufficiently developed, plate fogged at the top from the dark-slide not being properly shut. (3) Over-exposed. (4) Over-exposed and under-developed. (5) Over-exposed and fogged in development. (6) Not sufficiently developed, plate fogged at the top. (7) Out of focus, fogged in developing. Let us know what books you have on photography, and send formula of developer you use.

**VINDEX.**—The "View" camera is a capital instrument. The extra long extension is specially useful



for copying, and you would find it very useful with the "Doublet" lens you have chosen, which we cannot improve on.

**ASHTON.**—No. 1 is frightfully over-exposed. No. 2 is not so much exposed. No. 3 is not so bad as No. 1. Cut your exposures down a little, and use a little more bromide in the developer. No. 2, it strikes us, might be a little sharper focussed. The prints were covered with crystals of some kind. Do you wash well between hypo and clearing?

**M. S. D.**—To mount the prints you must use a warm solution of gelatine, 20 gr. to the ounce, and place the glass and print in this and then squeeze together. The print is a good one. We hope to be able to publish particulars in a week or so.

**F. YOUNG.**—The negative is slightly fogged, but otherwise calls for no special comment, and is of the usual character of Eikonogen images. (2) We should not advise you to separate the lenses, but sell them and buy a 6-in. lens.

**C. A. T.**—The negative is so fogged in developing that it seems almost impossible to say whether under-exposed or over-exposed. You will not obtain any decent results in such work till you use colour-sensitive plates and a yellow screen. We shall be pleased to give you any help we can if you will call any Monday afternoon or send us your address.

**F. PARTRIDGE.**—(1) The clearing bath may be used over and again. (2) What sort of frames do you want—metal, or plush, or wood?

**DARK-ROOM.**—See the *Photographic Quarterly*, April, 1890. An able article by Mr. C. H. Bothamley, F.I.C., F.C.S.

**D. MACADAM.**—Very well, but really we ought not to be at any expense in loaning societies the prints sent to our photographic competitions.

**PERCY SHEARD.**—We cannot enter upon a correspondence as to why the photographs did or did not obtain awards; as to our criticism of them, that will appear in the book "Holidays with the Camera," if you elect to leave the prints in our hands.

**TRAVELLER.**—(1) It is necessary and advisable to go with your passport to the police, who will give you every assistance. Many places are free, but ruins, etc., are carefully and jealously watched over. (2) For touring, films are decidedly preferable. (3) B or E new pattern.

**CAB. PHOTO.**—We will write you by post.

**SUNESIS.**—Thank you for your letter. The excess was noted too late. We shall for future competitions make a more stringent rule in this respect. The publication of an answer does not mean that no other competitor gained equally high marks. Your answers to 1, 2, 3 were received and marks awarded.

**R. C. MACLEOD.**—If the questions do nothing else, we shall be satisfied if they set you hard at it. May we suggest you limit your studies, however, more particularly to photographic chemistry; you will find ample occupation in reading up all you can on this subject without entering into any wider fields. We shall be pleased to assist you in any way, either by suggesting books or a complete course, and also by helping you out of any difficulties.

**FLEX.**—Much obliged to you, but we may suggest that did you fill either of the positions suggested in your letter, you would probably change your mind. The examiners cannot admit your answers, and if they did, could not award you many marks for answer 7, which contains many inaccuracies. You will be able to compare your answer to No. 9 with the published answer.

**H. G. BRIERLEY.**—The quantity varies, but from 4 to 6 feet is about the usual run.

**LEO.**—No. 1. There is much too strong a light on the sitter's eyes, and if you had carried development a little further you would have got a better result. We have made a print from your negative and, if you like, you can see it. A shorter exposure and a little longer developing would have improved matters. Do you want print and negative back? Your second letter to hand. We will write you.

**J. S.**—A great deal depends upon the quality of the other prints sent in, but the work is good. We have kept three, which are the best, and are much obliged to you. We shall hope to see you soon as a competitor in our competitions. Had you got a little more detail in the recumbent figure on the tomb, this print would have been perfect, and had you swung the gate open and removed the figure this picture would also have been improved.

**W. F. FOY.**—(5, 6, 7, 8) Much over-exposed; plate not developed enough. Not one plate has been sharply focussed, and most of them have got double outlines from movement during exposure.

**FOREIGNER.**—(1) You will probably have noted that your camera was not quite level, consequently the east window leans to one side, otherwise this is good. Did you back your plate? (2) Here a backed plate was essential, and we should have placed the dark table the other side of sofa. The camera was not level here; note the slanting line of the top of cabinet and extreme edge of window on left. We should have also cleared out the settee so as to show more of the cabinet and its treasures; the exposure was just right, however. (3) Cut off half an inch of the lower part of print, and, had you placed your camera the other side of water and about two feet from the ground, you would have got another picture. We should also have made the water wheel on the left more prominent or given it a plate to

itself. (4) Good. We fancy your lens is rather too short a focus; you would get more artistic results by using one of rather longer focus. Considering the short time you have worked, you are to be congratulated on such good results. Will you send us some more in three months' time? The print, as you suppose, is on the back of the albumen.

**R. N. BREALEY.**—You can take a seascape by moonlight if you like, but all the commercial pictures of such a class are obtained by taking such a scene right against the sun with a quick shutter exposure. No. 2 is the better of the two. We will insert your query next week, as we know of no such book.

**ST. BERNARD.**—A would be quite suitable, but there would be practically no gain in depth of focus over B. The second series are decidedly inferior in definition, rapidity, and working aperture. We should prefer B to the second series. The shutter should be placed just before the diaphragm, and the full aperture of the shutter should be larger than the diaphragm aperture, practically the full size of hood. We prefer the drop shutter.

**R. CLAPHAM.**—Very much better results can be obtained by the use of ordinary matt-surface paper. The idea is by no means new, about fifteen years old, although the effect is as you say.

**H. H. GRAY.**—Our objection was not to the term "camera club," but to the absurd use of the word "amateur."

**LUX.**—It is quite possible the articles will be published in book form, but no definite arrangement has been made.

**J. THOMAS.**—A very fair lens with good covering power. Horizontal pictures only can be taken with the camera as at present made, but it would not be difficult to adjust it for vertical pictures.

**E. PERRETT.**—We should advise hand-cameras Nos. 3, 6, or 7. They are the best in the list.

**R. E. NICKERMAN.**—We have no knowledge of the lamp mentioned. The burnishers are well worth buying.

**HAND-CAMERA.**—If you want a cheap camera have No. 2, but if prepared to spend more money, go in for the larger sizes of No. 3. Will possibly write you later on.

## Quarterly Examinations in Photography.

### QUESTIONS.

13. Explain the chemistry of fixing. Is there more than one variety of fixing bath? Give formulæ, and state advantages and disadvantages of each.
14. How would you intensify a plate with very dense high lights and very weak shadows?
15. Describe the method of developing bromide paper with ferrous oxalate.

(Latest Day for Answers—February 23rd.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
2. All answers must be preceded by the question, and should be written on one side of the paper only.
3. A *nom de plume* may be used, but in every case the full name and address must also be given.
4. Answers must not exceed 250 words, unless otherwise stated by the examiners.
5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,

1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny Stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words,

counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the SELLER to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent, the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered and letters forwarded for a fee of 3d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer" bound, complete from beginning; what offers cash?—Rector, Elm, Frome.

Seven vols. AMATEUR PHOTOGRAPHER, five bound, splendid condition, from 1887 to date; what offers? Smith, St. Peter's Vicarage, Hammersmith, W.

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, vols. vii., viii., ix., x., xi., xii., unbound; "Photographic Societies' Reporter," vol. i., unbound, sale or exchange.—Percy Morris, School Hill, Lewes.

114 AMATEUR PHOTOGRAPHERS, 73 "Photography" clean; what offers?—17, Sedan Street, Walworth.

Backgrounds.—Two flatted oil backgrounds on rollers, landscapes with trees, 8 ft. by 7 ft., as new; 10s. each; photographs sent; bargains.—William Hare, Photographer, Sutton, Surrey.

Bicycle.—Will exchange Hillman, Herbert, and Cooper's model E diamond frame safety bicycle, 1890 machine, very little used, and all accessories, cost £13, for a good half-plate camera and lens, three double backs and tripod, and some cash. What offers?—F. Norman, 18, Basset Street, Kentish Town, London.

Burnisher.—Burnisher, half-plate, with lamp, complete; 8s.—White, Stores, Arlington, Wantage, Berks.

Cameras, etc.—Enlarging camera, whole-plate, Lancaster's, quite new; also a gas regulator.—P., The Friars, Muswell Hill.

5 by 4 camera, Gotz's patent, central swing, revolving disc for lens, every possible movement, beautifully made, also four double backs, with carriers for quarter-plates, complete set of Eastman's patent film carriers, all newest condition; price £26. No. 110, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Watson's 10 by 8 Premier camera, in solid leather case, with one double dark-slide, equal to new, with or without Ross lens, also Ashford tripod, cheap; ill-health reason for selling.—Address, Gwen, care of Penn, Stationer, Maidenhead.

Cameras, Lenses, etc.—Tourist camera (by Ross), 7½ by 4½, one double slide, removable partition for thin leather case, in good condition, £2 10s.; pair Ross' single stereo lenses, £1 10s.; or exchange good quarter-plate camera and slides.—Collins, Chalont, Bucks.

Lancaster's half-plate Special camera, 1890, rectilinear lens, stops, three double dark-slides, tripod, with revolving top case, burnisher, plate-washer, etc.; the lot, or separately, what offers?—Mottram, Ventnor Villa, Kingswood Road, Moseley, Birmingham.

Half-plate Lancaster's Merveilleux camera, lens, tripod, and three Tylar's metal dark-slides, all in good condition; first offer of £1 has the lot.—Bond, Wharf Road, Bishops Stortford.

Half-plate Criterion camera, three double backs, Optimus 7 by 5 R.E., canvas case, all nearly new; price £8 10s.—N., Abbotfield, Mannamead, Plymouth.

12 by 10 solid mahogany studio camera, brass-bound, 2 ft. long, winding out to 3 ft. 3 in., further extension of 10 in. for copying and enlarging, usual carriers, extra backs for 9 by 7, double cabinets, cards, upright and horizontal, midgets, etc.; £4.—W. Nayland, Winwood, Tunbridge Wells.

Camera, 7½ by 5, special make, extending to 18 in., sky shade, pneumatic shutter, six light double dark-slides, shutter, drawing right out, Dallmeyer's R.R. 8 by 6, strong waterproof cases, holding entire kit,



extra high stand, 5 ft. 4 in.; £9; as used for my marine series.—Wm. Mayland, Winwood, Tunbridge Wells.

Lancaster's quarter International camera, three double slides, perfect condition, Ross' landscape lens and case, f/0.3; also Optimus half plate wide-angle lens, quite new, 42s. Wanted, R.R. 5 by 4 lens, good maker, cheap, or exchange.—Gibbs, Manchester House, Bedminster, Bristol.

Lancaster's stereo camera, Instantograph, with best lenses and instantaneous shutter, and three double slides, £3 5s.; Dallmeyer's 18 lens, £2 10s.; Dallmeyer's 10 by 8 triplet, £3 10s.; Ross' 2A portrait lens, £8.—J. Biddle, 97, Medlock Street, Manchester.

Instantograph, half-plate, reversing back, long-focus leather bellows, Instantograph lens and shutter, Iris stops, double slide, folding mahogany stand, developing dishes, printing frames, ruby lamp, measure, etc., finest order; 80s.; approval.—Cooper, 9, Sussex Terrace, Markfield Road, Page Green.

Gas Bag, etc.—Gas bag, once used, cost 39s., price 20s.; pressure boards, 7s. 6d.; retort, 5s.—Harrison, Spring Terrace, North Shields.

Hand-Cameras, etc.—Kodak camera, No. 4, plate 4 by 5, with 10 exposures, never been used, in case and manual, complete; in for £3; ticket to be sold cheap.—Apply, C. Clarke, 140, High Street, Camden Town, London.

Hand-camera, automatic changing, holds 12 quarter-plates, with lens, shutter, finder, etc., complete, price 42s. 6d.; whole-plate long-extension bellows camera, all movements, one double back, price 70s.—T. Mercer, 13, King Street, Sparkbrook, Birmingham.

No. 1 Kodak, cost £5 5s., only used once, contains about 60 films still unexposed; £2.—Geo. Wheeler, 46, King Street West, Manchester.

Lenses.—Dallmeyer's half-plate triplet lens, very good condition, cheap; 50s. or offers.—H. Cooke, 3, Weekday Cross, Nottingham.

6 by 4 Euryscope, f/6 lens; Waterhouse stops, bargain, 18s.—R. Henry, 2, Hawthorn Villas, Slad Road, Stroud, Glos.

Rapid rectilinear lens, half-plate, loose hood, fine definition, suitable for either views, portraits, architecture, etc., in finest order, and fitted Waterhouse stops; 27s. 6d.; approval.—Thurlow, 23, Gotha Street, Victoria Park, E.

Ross' quick-acting carte-*à-visite* portrait lens, 6 in. focus; cost £11 10s.; price £3, or offers; perfect condition.—No. 109, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, Ludgate Hill, E.C.

Euryscope lens, quarter, as new, stops, case, etc.; only 30s.—Ralph Saunders, Exminster, Devon.

Pair of Dallmeyer's rapid landscape stereo lenses, f/10, Nos. 9344, 9345, with extra flange for hand-camera, perfect condition; price 52s. 6d.—Smith, 393, Alfreton Road, Nottingham.

8 by 5 R.L., 50s.; 7 by 5 portable symmetrical, 40s.; 5 by 4 ditto, 28s. (all Optimus make); 15 by 12 Ross' single, conical mount, £2; pair compound stereo lenses, £1. Wanted, quarter-plate camera, prefer

one with six backs and brass-bound Ross' P.S. lenses No. 5 and 6.—Collins, Chalfont, Bucks.

Pair Optimus 5 by 4 rectilinear lenses, for stereoscopic work; £3.—Geo. Kilburn, Eastfield, Batley Carr, Dewsbury.

Lancaster's half-plate instantaneous view lens, Iris diaphragm; cash offers.—Summers, 143, Stanstead Road, Forest Hill.

Ross' quarter-plate portrait lens; 30s.; bargain.—55, Bore Street, Lichfield.

Lenses, etc.—Lancaster's half-plate Instantograph lens and shutter, Iris diaphragm, f/10 to f/80, new; 21s.—E. Mi hin, 162, York Road, Lambeth, London.

Valentine's cabinet portrait lens and new mahogany drop shutter to fit; price 30s.—W. Rose, Westcott Street, Dorking.

Sets.—1891 Underwood's quarter-plate Compactum set, new; bargain, 14s. 6d.—John Slade, 51a1 Road, Stroud, Glos.

Half-plate International set, three slides, leather case, good condition; £1.—Thomas Clarke, Athelnum, Manchester.

Half-plate International set, Iris diaphragm, lens, four double slides (three Tylar's metal, with screen), and one single, in good waterproof case, and tripod in case, price 70s.; also Ross' stereoscopic Tourist camera, three double slides; 60s.—J. B., 14, Bartholomew Villas, Kentish Town, N.W.

Splendid half-plate set, Thornton-Pickard Tourist, as new; cost £15; what offers? approval pleasure. Wanted, whole-plate set, same make preferred.—Photographer, Wollaston, Wellingboro'.

Whole-plate set, complete, Lancaster's 1891 extra-special camera, brass-bound, with every movement, three double backs, Optimus R.R. 9 by 7 lens, Ker-shaw shutter, and folding tripod stand, the whole good as new, in leather-bound case; cost £17; will take £12; a bargain; or exchange for half-plate set, complete, and cash.—E. Blow, 45, Clyde Road, Addiscombe.

Shutter.—Drop shutter, half-plate, mahogany; cost 8s. 6d.; price 4s. 6d.; as new.—F. Thornton, 15, Bromley Road, Beckenham.

Sundries.—Cassell's "British Battles," four vols., complete; unbound; Stirra's vest camera; will exchange with cash for cabinet portrait lens or hand-camera, or sell separately.—Robert Hamilton, Ladeside, St. Strathaven, Scotland.

Denoulin's photometer, 4s.; Ward and Lock's "Universal Instructor," complete in 45 parts; what offers in photography?—Mr., 30, Dunlase Road, Lower Clapton, London, E.

Splendid 4 in. double condensers magic lantern, portrait lens, in travelling case, almost new, only 21s., worth 50s.; several photographic slides at 3s. per dozen; about 230 AMATEUR PHOTOGRAPHERS, can, 5s. 6d.; several dozen quarter-plate negatives of Cornish scenery, etc., good, 2s. 6d. per dozen; also larger sizes, cheap; 10 ft. lantern sheet, with rings, new, 5s. 6d.—Dalby Smith, St. Thomas Street, Weymouth.

Tents.—Eclipse ruby tent cost 25s., in good con-

dition; for 12s. 6l.—F. W. Ferry, 92, Malmesbury Road, Bow, London, E.

Tripod, etc.—Half-plate folding mahogany tripod, 5s.; 12 by 10 retouching desk, 4s. 6d.; exchange 12 by 10 metal slide.—Cooke, 49, Chapel Street, Rugby.

Violin, etc.—Valuable bargain. Fine mellow-toned violin, in perfect preservation, suit lady or gentleman for orchestral or solo playing, complete with bow, baize-lined case, and accessories; take 15s. 6d. for the lot; violin alone worth double; money willingly returned if not approved. About 20s. worth of unsold music will be given in free.—Graham, College Buildings, Ipswich.

## WANTED.

Cameras, etc.—Whole-plate or 10 by 8 modern camera and slides.—Evans, Stationer, Conway.

Cameras, Lenses, etc.—To purchase second-hand cameras, lenses, and photographic sundries for prompt cash. Immediate attention given to all correspondence.—Amateur Photographic Depot, 71, Oxford Street, Manchester.

Hand-Camera.—Kodak, No. 3, hand-camera, complete, in new condition; will give in exchange Ross' R. S., 7½ in. focus, half-plate lens, with Waterhouse diaphragms, cost 5 guineas, equal new, and half-plate burnisher.—Barton, Morriston, Elgin.

Hand-Cameras, etc.—Shew's Eclipse quarter-plate hand-camera and stand, cheap for cash.—No. 112, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lanterns.—Lantern, optical and enlarging combined, by good maker, strong and cheap.—Reynolds, 17, Camberwell Station Road, S.E.

Lenses, etc.—Lens and shutter for home-made hand-camera, about 4½ in. focus, quarter-plate, good, cheap.—Coppall, Solicitor, Worcester.

Used celluloid film, also quarter lens and 3 slides.—Abel, Carriers Dock, Liverpool.

Outfit.—Quarter-plate outfit, cheap, or exchange for Cassell's "Household Guide," bound calf, new.—Armitage, Station Road, Slaitwaite.

Set.—Half-plate, complete, Underwood preferred, cheap.—Chas. Stone, 126, Southampton Row, London.

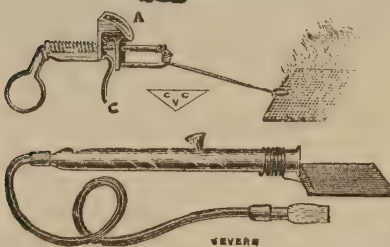
Sundries.—To purchase dishes, printing frames, measures, leather case for half-plate camera, and other photographic sundries second-hand, must be good.—B. Farke, Fernleigh, Woodsetton, Dudley.

## Lantern Slide Exchange.

NOTE.—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

F. C. A. Willersley, Cromford, Derby, has several sets of slides which he is tired of, "Dick Whittington," "Sinbad the Sailor," etc. Will be glad to hear of anyone willing to exchange.

## VEVERS' WINTER SPECIALITIES!!!



**Magnesium Flash Pistol.**  
No blowing! nothing breakable!  
Complete in box, with instructions, 1/-; post free, 1/3.

**Magnesium Flash Lamp.**  
In box, complete, with directions. With mouthpiece, 1/3; with pneumatic ball, 1/6; postage, 3d.

On receipt of negative and P.O. for 2s. 6d., we will send, carriage paid, a First-Class

Enlargement, on a 22 by 16 Mount, ready for framing.

For full particulars of above, and every Lantern accessory, Slides, Jets, Lamps, Oxygen in Cylinders, Toy Sets, and hundreds of useful Novelties, see

**LANTERNS.** Japanned, 4 in. condensers, 30/-. Russian iron, 4-wick Lamp, 43/-. Mahogany, with door, etc., 57/6. Bi-unial, brass stages, etc., £8.

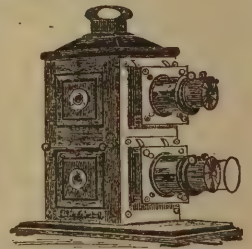
(Full particulars in Catalogue, 2d.)

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**SELF LIGHTING GAS BURNER, 2/6** post free 2/9

in neat box. 6d., we will send, carriage paid, a First-Class



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# The AMATEUR PHOTOGRAPHER

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VOL. XIII. No. 333.]

FRIDAY, FEBRUARY 20, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

**OUR VIEWS.**—The 1890 Prize Slides at Maidstone—Mr. John E. Austin's Work—Photographic Exhibition at Glasgow—Photographic Rights at the Crystal Palace—The Leicester Society and their Special Entertainment—Reduction in Rates for Fire Insurance—Cheap and Reduced Railway Tickets, Spirited Action of the West London Society—Major Nott on Animals, at Richmond—Dr. Emerson and Mr. Davison—Uniform Thickness of Dry Plates—An Amateur Photographer Receives Recognition by Her Majesty—Ourselves as Others See Us.

**LEADER.**—Science to the Front.

**LETTERS.**—Mr. Davison's Misrepresentations (Emerson)—Vienna Exhibition (Mayne)—Wanted Lantern Slides (Baskett)—Marking Slides (Becher)—Uniformity of Thickness of Plates (Smedley)—Aristotype Paper (Pim).

**ORIGINAL ARTICLES.**—Construction and Use of Photographic Lenses, illustrated (Leaper)—Instantaneous Photography (Harrison)—The Stereoscope (Blanchard)—Studies in Art for Photographers, illustrated (Lambert)—Photographic References (Nott)—A Rapid Hydroquinone Developer—Hydroquinone as a Developer—Jacoby's Chloride of Silver Emulsion Paper.

**NOTES FOR NOVICES.**—The Diaphragm, Single View or Landscape Lenses.

**NOTES.**—*Liverpool*: Dinner of the Association—The Report—The Derelict—The Exhibition—1,500 Frames—A Lecture on Normandy. *Edinburgh*: A Call made upon the Guarantors for the Recent Exhibition—Making a Washer—Artists and the Camera.

**SOCIETIES' MEETINGS.**—Birmingham—Bradford—Brighton—Bristol—Bolton—Cardiff—Carlisle—Croydon—Darlington—Dundee—Glenalmond—Hackney—Haltwhistle—Harlesden and Willesden—Huddersfield—Ilkeston—Ireland—Isle of Thanet—Kendal—Lantern Society—Manchester—Pudsey—Richmond—Rotherham—Stockton—Photographic Society—Toynbee—Tunbridge Wells—West London—Wolverhampton.

ON Monday we had the pleasure of exhibiting the AMATEUR PHOTOGRAPHER 1890 Prize Slides at the Palace, Maidstone, to a large and select audience, members of the Maidstone Amateur Photographic Society and their friends. The slides excited much interest, especially as the President, Mr. John E. Austin, was a prize winner, having been awarded a Gold Medal for the slides contributed in Class II., Figure and Genre Subjects. The Maidstone Society, thanks largely to the energy and ability of the President, is flourishing in every way. It now numbers some fifty members, many of them very active workers in photography, the success of Mr. Austin having a very stimulating effect upon them. The district in and around Maidstone is eminently fitted for photographic work, the quaint traffic on the Medway, the beautiful Kentish homes, and the glorious woodland scenery being ever at hand to tempt picture makers. It was our privilege to be Mr. Austin's guest, and we were delighted to have an opportunity of spending an hour of two with him in his dark-room and studio. Mr. Austin is a man of method and order. He registers his failures quite as religiously as his successes, and it was instructive to note the trouble that he takes to secure the best result from his negatives. He is a perfect cor-

morant for work, and we believe as a prize winner he holds his own against all comers. His first medal was awarded by Messrs. Robinson and Hastings, at Tunbridge Wells, in 1888, but Mr. Austin has been a worker for many years, and showed us wet collodion negatives taken when he was at Oxford. Since the award in 1888, Mr. Austin has never exhibited without being medalled; his record is now 51 awards, viz., 33 firsts (including 7 gold), 15 seconds, and 3 thirds. We hope that his pictures may for many years be shown at exhibitions.

WE are pleased to note that an International Photographic Exhibition will be held in the Galleries of the Fine Art Institute, Glasgow, in September next, under the auspices of the Glasgow and West of Scotland Amateur Photographic Association. Special attention will be paid to the forming of a Photo-mechanical section. We would remind our readers that one of the most delightful months to visit Scotland is September, so possibly many may be able to fit in their holidays, so that they will be able to pay a visit to the Exhibition. Mr. W. Goodwin, the Hon. Secretary, 180, West Regent Street, Glasgow, will gladly supply further particulars.

SOME correspondence has reached us with regard to the photographic rights of Messrs. Negretti and Zambra, at the Crystal Palace. Our correspondent should remember that the Palace is the property of a private trading company, and that they are perfectly justified in making any terms they please with regard to the taking of photographs within their buildings or the adjacent grounds. Messrs. Negretti and Zambra paying a heavy rental for the right, are hardly to be expected to grant permission to an amateur to take photographs even upon his promise "to make no use of them except as an amateur."

WE note that the Leicester and Leicestershire Photographic Society intend to hold a special lantern and musical evening on the 12th prox., at the invitation of the Vice-President, Mr. F. G. Pierpoint. The Secretary asks us to state that they will gladly welcome members of neighbouring societies, such as Derby, Nottingham, Birmingham, etc. If our engagements permit, we shall hope to attend.

OUR readers may be pleased to see that one of our subscribers has succeeded in obtaining a very considerably reduced rate for fire insurance. We hope to publish the name of the office next week.



It will be remembered that Mr. W. A. Brown, President of the West London Photographic Society, recently brought up the matter of cheap or reduced railway fares for photographers. The matter has been followed up with much energy, and the Chairman and Directors of all the railway companies having their terminus in the Metropolis are to be memorialised; to this end a form of memorial has been drawn up and submitted to all the London and suburban photographic societies for signature. It is to be hoped that the movement will be largely supported. It will only be, as we have already said, by united effort that those interested can expect to secure the concessions which seem so desirable.

WE must congratulate the Richmond Amateur Photographic Society on the good audience who assembled at the Lecture Hall, Hill Street, Richmond, on Monday night, to hear Major J. Fortuné Nott, F.Z.S., its President, deliver a very interesting and instructive lecture on the subject of "Wild Animals in Captivity." The lecture was illustrated by means of sixty or seventy lantern slides from photographs taken by the lecturer himself in the Zoo, the Jardin des Plantes, and elsewhere, and though he did not claim that they were good photographs, many were really excellent specimens of work. The remarks in connection with the various animals showed that the lecturer had a good grasp of his subject, which in places he treated with a light and humorous touch. It was pointed out that all animals were afraid of man, and that if they were relieved of the necessity of constantly seeking food and were kindly treated, they could all be tamed. The first of the series was a single-humped camel, a white fine-haired dromedary, which, the lecturer pointed out, only existed in a state of subjugation. The camel was probably one of the first, if not the first, of the animals caught, tamed, and utilised by man. The word dromedary simply meant racer, so that though all dromedaries were camels, all camels were not by any means dromedaries. The next picture was that of a camel and her calf in a state truly described as that of a "bag of bones." They were found on the battlefield of El Teb, and sent to the Zoo. By the miscarriage of a telegram they were saved from being killed, and a photograph of them taken three months after their arrival here was evidence of a strong constitution and assimilating powers. Some of the other pictures were the white ass of Arabia, the zebra, lion, Bengal tiger, leopard, puma, jaguar, and the seal. The lecturer pointed out that the animal which provided the sealskin in which ladies were so fond of enveloping themselves was not the true seal, but the sea-lion, which animal also possessed a mane. This fact was proved by the photograph of one of the species lying on a wall in the sunshine, so that he had got dry, and the mane was most pronounced. An audible smile was caused by the statement that in one of the natural history books used for educational purposes it was said that the general impression that a sea-lion had a mane was wrong, that the animal did not possess one. The giraffe, hippopotamus, rhinoceros (the hairy species), which cost the Zoological Society £1,250, making it the most expensive animal in the gardens, Jumbo, Alice, the chimpanzee "Sally," and many others were referred to, the whole being thoroughly appreciated by a most attentive audience. The proceeds are to be devoted to the Richmond Hospital.

It was to be expected that Dr. Emerson would reply to Mr. Davison. He has done so, and we publish his letter, minus a few paragraphs which are either irrelevant or of an unnecessarily personal nature. This being done, it is our intention to allow no further correspondence upon a subject

which has no interest to students in photography, and which has assumed the form of a bitter personal quarrel.

THE letter published from Mr. F. Smedley, on the "Uniformity of Thickness of Plates," is deserving of attention. Plate-makers have much difficulty to contend with. Still, plates of uniform thickness might, we should think, be set aside for hand-camera work. The straining of the sheath by the insertion of a thick plate militates against the perfect changing, and the insertion of a thin plate into the sheath that has been so strained leaves it loose and very unfit for exposure. We commend the matter to the consideration of the plate makers, who are certainly not lacking in enterprise.

A SUBSCRIBER writes us under date of the 14th inst.: "Last July I photographed by request the little Duke of Albany. I took eight negatives, some very good and others only fairly so. Copies were sent to her Majesty the Queen, and I had a letter from Sir Robert Collins, the Comptroller of the Claremont Household, expressing his pleasure, and saying that the Queen liked the photographs very much. On Thursday last a messenger came from Claremont, and he told me I was to send on prints of the eight negatives direct to her Majesty." We are very pleased to note that work done by an amateur photographer has received recognition at the hands of the Queen, and we hope to be favoured with at least one portrait of the infant Duke of Albany.

THE following two extracts from recent letters are interesting:—"I need scarcely add that, as a subscriber to the AMATEUR PHOTOGRAPHER from its birth, I appreciate your opinion upon matters photographic very highly. Perhaps it may be interesting to you to know that about three weeks ago I advertised a hand-camera for sale in your paper, and had twenty-one replies, which clearly shows how popular your journal is."

#### SCIENCE TO THE FRONT.

REMEMBERING the recent recantation, it is therefore peculiarly welcome that scientific photography should just now be shining with unusual effulgence. The bright lustre being radiated is produced by nothing less than the announcement of the long-looked-for and often-promised discovery of photography in natural colours.

We last week shortly referred to the communication which M. Lippmann made to the French Academy of Sciences at Paris, in which he claimed to have found a means of producing polychromatic positives, and in proof thereof he showed a photograph of the solar spectrum, in which the seven colours were clearly visible. According to further particulars since to hand, M. Lippmann has not only been able to get the seven ordinary colours on his plate, but has also secured the so-called invisible rays, *i.e.*, the ultra-violet and the infra-red ones. He has, besides, according to the *Daily News*, managed to reproduce the colours of a stained-glass window.

So many have been the claimants in bygone days of the discovery of this much-wished-for desideratum, that a reasonable amount of scepticism is pardonable.

How has this erstwhile chimera become almost a living reality? We are told that it is the outcome of what is known as the "inductive" method, and is not, in the first instance, due to experiments.

To explain in language understandable by all how the colours are said to be produced, is not easy. Shortly stated, we are told that the colours are due to the "interference" of various waves of light, causing a correspond-



ingly thick deposition of *layers* of silver. Each colour has a different wave length; for instance, that of green is half as long again as that of red. The effect of what is known as "interference" is that the rays of light are broken up into their wave lengths by a series of bright lines alternating with black (non-luminous) ones; hence it is claimed a succession of superimposed layers of silver of varying thickness are deposited where the respective colours act on the sensitised silver. Inasmuch as each of the above named layers of silver is the exact measure of the particular colour wave which caused its deposition, no other colour wave can subsequently pass through the said layers of silver; *i.e.*, shorter or longer waves cannot transmit their undulations.

The "interference" referred to is produced by means of a mirror. The sensitised film is backed by a suitable arrangement of mercury, which reflects the rays falling upon its surface.

We are told that the gelatine bromide film may be fixed in the usual manner, hence, unlike previous colour photographs, the present process is a permanent one.

At first sight the above theory seems to be one of considerable promise, and appears to endow us with the power of recording with tolerable relative accuracy the various colours of objects; but there are reasons to think that this colouring is lacking in that sharpness of definition which we are able to obtain in a monochrome photograph. This defect may in time be overcome.

If there be at the present time anything connected with the practice of the art-science which vexes its votaries, it is the exasperating ease with which the merest tyro is at times able to rival the works of the "old photographic hand." Should colour photography become an accomplished fact, there will be no more grumbling at the sweet simplicity of camera work. For instance, as colour photographs have to be developed in the usual non-actinic light, it follows that such tints as blue, green, and purple will be unrecognisable as such until the plate is fixed. In fine, should this new departure be all that M. Lippmann claims, we shall all be shortly passing through very troublesome times. Space and other considerations forbid our enlarging any further on this interesting topic, but we hope before long to take up the subject more fully and enter into minuter details, for the benefit of such of our readers who desire to test M. Lippmann's epoch-making discovery.

## Letters to the Editor.

### MR. DAVISON'S MISREPRESENTATIONS.

SIR,—There is an old adage that weak men hate none so much as those who have done them favours or taught them how to shoot. The truth of this adage is pleasingly exemplified by Mr. Davison's "reply." Mr. Davison, an "audit clerk," has found time after or between office hours to perform good secretarial work for an amateur photographic club, to write "drivel" (his own word) peppered with a grain or two of other people's property, and to take, at most, four photographs having any claim to artistic merit. In each of these the "clouding" is false, but what of that to a man who talks of values. Having done these great deeds and had his vanity flattered by a couple of portraits published in the photographic press—he begins to think himself someone, and poses in public as an authority. He has, now that his master—myself—has seen fit to abjure certain philosophical doctrines, been ungrateful enough to try and belittle me. Well, so be it. But in so doing he unwittingly belittles himself, for he has written me that I alone of photographers was an artist or knew what art was, that my book ("Naturalistic Photography") was most original (*vide* his review in *Camera Club Journal*), and he, a little while ago, brought his (pictures?) down for me to select the good ones for reproduction, and he wrote me afterwards that he had yet one he thought I should approve of. He told a

friend he was taking "pin-holes" for me, but when I wrote asking him for them, I could get none, and so on, and so on. It did his insight credit to recognise his master, but now his master has thrown him up as unworthy. For art one must give his skin, and learn to labour and wait.

But the public must be set right, or the petty vapourings and "clerkly personalities" may mislead.

As to the question of originality of "Naturalistic Photography," the photographic press and the chief photographers have allowed that. That certain vague ideas on Naturalism were current in the studios in certain circles I know, for I have the pleasure of the friendship or acquaintance of nearly every member of what is called the "modern school," and what they think of my originality and work, shall one day appear. It is not surprising to find the plagiarist who has lined his pockets with guineas taken for re-writing others' ideas—belittling that other. But to one who is thinking and working day and night at art, and has the knowledge, new ideas are not uncommon, and one day I shall offer a philosophy of art that will be, I venture to think, generally accepted and original; but that is a matter for ten or twelve years' more constant study and work. My plagiarist must not tell me I have no right to kill the goose that laid the golden eggs—it is too amusing.

The limitations of photography are all I have said—I regret it. I have been in correspondence with those able investigators, Hurter and Driffield (who have said if they are proved wrong they will withdraw ten years' work), and understand the matter thoroughly. I have confused nothing, the control of the values is most limited, and by development there is no control. I leave all scientific photographers to laugh at "the power to alter relative values by exposure, development, and other purely photographic means is infinite" (more "drivel")!

Mr. Davison's art knowledge is shown by the words, "What on earth has 'dexterity' to do with it?"—a little knowledge is really a dangerous thing.

It may take Mr. Davison more than a few weeks, doubtless, but then he can only dabble in art after office hours.

As to claims of "novelty for rough papers," I refer readers to the trash written by Mr. Davison on this subject in the "Photographic Art Journal," a few months ago. I tried rough paper some eight years ago, and the fact is recorded in "Naturalistic Photography." Others tried it before me, and Mr. Mostyn Clark made a series of elaborate experiments with printing papers some years ago. (Results exhibited at Pall Mall.)

I have no doubt certain members of the Camera Club of the Davison type felt my presence there a satire, and will feel more comfortable now they can pose undisputedly as authorities to those who are silly enough to heed them. But I seldom troubled that institution, although I was one of the original founders, which Mr. Davison was not.†

The pupil's opinion of his master's work is laughable and pitiable. Does he think he can ever grip what he thinks is "sadly wanting" in my photographs? I am sure he will never grip it—that requires hard work.

The worm turns and talks of competing with me. Being at times sportively inclined, I will set up a head in clay against my old pupil for £100, I will photo-etch a plate against him for £100, I will teach him how to print photogravure for £500; as for competing against his four pictures (my, what laughter his last "work" caused to some of us!)—well! well! my old wherryman Joey picked up a few crumbs of knowledge with me, and he talked one day of "taking a pictur' agin' me." Poor Davison is of the same blood as Joey.

Referring to the quotation from Mr. Davison's letter, I was willing (not anxious) to gratefully acknowledge Mr. Davison's words on behalf of "Naturalism," as I was willing to acknowledge everybody else who supported me.

Mr. Davison speaks of my "treating" with him to write for a journal I had in view. I may say I had a promised staff of artists stronger than that of any artistic journal in the world, but the capital to do the thing as we wanted was too great. I asked Mr. Davison (chiefly out of gratitude) to write a few historic memoirs for me, beginning with Sir J. Newton, the miniaturist. I felt I should like to find some work for my old disciple, and knowing Mr. Davison to be perfectly incapable of writing upon art or technical photography, I thought me of the "historic" corner.

\* Col. Noverre claims originality for degree of roughness used—this claim, so far as I know, is legitimate.

† The paragraphs here omitted are irrelevant.—ED. AM; PHOT.



It was a little work to dig out these matters, but too much work for this *plumeur*. If I were the editor of a responsible paper, Mr. Davison's art tattle should never appear.

I submitted the "expostulating" letter to Mr. Graham Balfour—a gentleman and a scholar—before I sent it. Mr. Balfour approved of it, and he has watched the development of "Naturalistic Photography" *ab initio*. He will, no doubt, tell Mr. Davison what he thinks of him when they next meet. I never "wheeled," or tried to wheedle anyone, and if Mr. Davison would keep his personalities to say face to face to me, I should know how to act.

The reference to the Society of Arts report of the "discussion" is a quibble. The emphasis given by my friend as to the origin and leadership of "Naturalistic Photography" was distinguished by its absence. The remarks referred to were made from headings of a speech previously prepared, and forthwith furnished to the Society. If your readers are not already bored, I could print them side by side, also the letter of "expostulation," which I am content should be seen by any gentleman.

Mr. Davison, to whom I gave a copy of "Pictures of East Anglican Life," wrote me a most effusive and grateful letter for it, praising the notes "To the Student"—alas, for human nature, that he should now talk of this deed as "advertising myself extensively"!

With that charming sense of delicacy and uprightness (!) which, together with modesty and gratitude (?), are such distinguishing traits in Mr. Davison's character, he has accused me of "vindictiveness," because I now find photography is limited. I have not even said I was going to give up photography. Whatever I do, my readers may rely upon this, that the upholding of truth (however unpleasant) will be my only desire.

Finally. A man who will stoop to commit literary theft will not hesitate to prove himself guilty of base ingratitude, malicious calumny, and deliberate falsehood. Mr. Davison's reply has proved him guilty of all these cowardly acts, and were the creature not too contemptible, he should receive his deserts in the law-courts. His "reply" will, doubtless, leave him as friends some kindred spirits, but few gentlemen, I suspect—in fact, his plagiarisms and manners at the Society of Arts decided some to cut him, and his reply has decided others.—Yours faithfully,

February 14th, 1891.

P. H. EMERSON.

\* \* \* \*

#### THE VIENNA EXHIBITION.

SIR,—Referring to the correspondence (Vienna Exhibition), we have not found our stringent rules (of which we had some misgivings) have in any way shut us out from receiving assistance from the best workers of the day, as we have over 200 exhibitors in all, over forty being from abroad, the placing at cost of the Association the foreign exhibits in temporary frames being appreciated by workers abroad. Everything points to an excellent exhibition.—Yours very truly,

T. S. MAYNE

Feb. 10th, 1891.

(Hon. Sec., Exhibition Committee.)

\* \* \* \*

#### WANTED LANTERN SLIDES.

SIR,—Will you allow me to appeal to your readers who are makers of lantern slides, for the gift of any spare ones they may have for the Eastern Counties' Asylum for Idiots at Colchester. I have personal knowledge of the delight the weekly lantern exhibitions afford to the afflicted inmates, and feel sure many will be willing to thus add to their pleasure. I need not say prize pictures are not solicited, but to indicate that many slides that would not pass muster at exhibitions will be available for this object. I shall be happy to receive and acknowledge any slides that may be sent for this purpose, although I am not connected with the institution. Unmounted prints will also be gratefully received.—I am, sir, yours truly,

GEO. W. BASKETT.

Albert Lodge, Colchester, February 6th, 1891.

\* \* \* \*

#### MARKING LANTERN SLIDES.

SIR,—Apropos of marking lantern slides by means of affixing white paper discs. I would suggest that a better plan is to paint the corners with Aspinall's white bath enamel; the index numbers of the slide can be written on the white paint with ordinary ink. The paper discs are liable to come off, the paint cannot.

I have also painted the bindings with various Aspinall colours which facilitates the sorting, each series having a distinctive colour or colours. But a word of warning—do not select your colours by daylight, as many perfectly distinct daylight colours cannot be distinguished in candle-light.

The paint is also a protection against damp.

SLIDES FOR CHILDREN.

Will anyone tell me what class of slides children like, *i.e.*, the low-class coloured slide such as rats running into a sleeper's mouth, or the better class slides such as animals, battle scenes, ships, etc., etc., from photographs. Of course, I do not mean the *fin de siècle* children, who, of course, would prefer astronomical diagrams and such like.—Yours truly,

E. F. BECHER

(Major, R.A.)

\* \* \* \*

#### FIRE INSURANCE FOR PHOTOGRAPHERS.

SIR,—Since reading your article in the *AMATEUR PHOTOGRAPHER* on the excessive rates charged by the larger Insurance Companies, I have taken considerable interest in the matter.

I have just effected a change of insurance myself, at a rate considerably less than formerly, and thinking, perhaps, something might be done for photographic insurance, I placed your article before the gentleman who secured for me a reduced rate, the results being, after considerable trouble, he has succeeded in obtaining a special rate for photographers that I am sure will meet with the approval of those who must be at present dissatisfied. I am now paying 3s. 6d. per cent., which I believe to be the lowest insurance rate on record for photographers.—Yours truly,

WILLEE.

February 11th, 1891.

NOTE.—Our correspondent does not state the office; perhaps he will do so in a subsequent letter.—ED. AM: PHOT:

\* \* \* \*

#### UNIFORMITY OF THICKNESS OF PLATES.

SIR,—Might I be allowed to suggest through your columns to our leading plate makers, that they adopt a more uniform thickness of glass in the manufacture of their quarter-plates? The increasing popularity of the hand-camera and consequent use of sheaths make this a matter much to be desired, for owing to the extent to which a box of plates vary in this respect, the filling of a dozen sheaths become a very vexatious and troublesome job, some plates, indeed, having to be thrown on one side as useless owing to their extreme thickness.

I am aware that there is on the market a plate of thin glass, but without taking into consideration the extra cost (which is certainly an item), there is open to it the grave objection of increased risk of breakage, both before and after the plate becomes a negative.

What is wanted for general use is not a plate of thin glass, but one of medium strength and uniform thickness. I think the greatly increased demand for plates suitable for hand-camera work, viz., the quarter-size of rapid series, quite justifies the request for the consideration of any little improvement that could be made in that particular make.—I am, yours truly,

FRED SMEDLEY.

\* \* \* \*

#### ARISTOTYPE PAPER.

SIR,—I have to thank Mr. E. J. Wall for pointing out an error (in theory at least) in my practice with this paper. I would, however, like to ask him why, in nearly all instructions, we are told to use alum to eliminate the last traces of hypo from negatives if its use be so deleterious as he states? Moreover, in practice I have not, so far as I am aware, lost or injured a single print from using alum. Of course, the seeds of decay may be in them and appear at any moment. I may also say that between the softness of the paper, tenderness of the film, and tendency to curl up in the washing waters, I found large-size Aristotype prints most difficult to handle till I used an alum bath. I do not put them direct from the hypo into the alum, but give a good wash in two or three changes of water, and then prolonged washing after. The alum hardens the surface and removes all tendency to curl. I will, however, in future, wash much more thoroughly previous to using the alum, but till I find prints distinctly injured, it is too useful to discard.—Yours, etc.,

GREENWOOD PIM.



# The Construction and Use of Photographic Lenses.

BY CLEMENT J. LEAPER, F.C.S.,

Instructor in Photography, City of Dublin Technical Schools.

## CHAPTER III. — (Continued.)

### THEORETICAL PRELIMINARIES.

IN the accompanying table of some of the varieties of glass made by Drs. Abbé and Schott, these data are given, together with the specific gravity of the same of glass and a concise description of it.

JENA OPTICAL GLASS.

Description	Refractive Index, for D line	Dispersion, C to F	Specific Gravity	Remarks
1. Light phosphatic crown	1.5159	0.00737	2.58	Colourless.
2. Dense barium phosphatic crown ...	1.5906	0.00922	3.66	Rather soft.
3. Boro silicate crown ...	1.5100	0.00797	2.47	Very hard and colourless.
4. Calcium silicate crown	1.5179	0.00860	2.49	Hard and colourless.
5. Soft silicate crown ...	1.5151	0.00910	2.55	Rather soft.
6. Boro flint ...	1.5503	0.00996	2.56	Affected by damp
7. Silico flint ...	1.6245	0.01743	3.68	Colourless.
8. Dense silico flint ...	1.7541	0.02743	4.78	"
9. Very dense silico flint	1.7782	0.02941	4.99	"
10. Extra dense "	1.9626	0.04882	6.33	"

On looking at the table it will be at once seen that the dispersions of two samples of glass do not vary in the same ratio as their refractive indices. Comparing, for instance, Nos. 1 and 3, it will be seen that whilst the refractive index of No. 1 is greater than that of No. 3, the dispersion of the latter exceeds that of the former.

The fact that dispersion is not proportional to refraction renders it possible to achromatise a combination of lenses, *i.e.*, to render them capable of transmitting white light as white light, and at the same time cause the rays to converge.

If, for instance, we make a convex lens of No. 1 glass in which the dispersion is practically  $\frac{1}{10}$  of the refraction, and cement it to a concave lens of No. 7 glass in which the dispersion is only  $\frac{1}{10}$  of the refraction, the latter would have to be made of only half the power of the former to give equal dispersion. And although by so altering it we reduce its refractive power as well as its dispersion, nevertheless what remains is still more than sufficient to neutralise that of the convex lens, and the combination will consequently be achromatic.

In other words, to correct chromatic aberration we must make the radii of the two lenses inversely proportional to the respective dispersive powers of the materials of which they are formed.

The mathematical expression for an achromatic pair of lenses is given by the equation—

$$\frac{a}{b} = \frac{c}{d}$$

in which  $a$  and  $b$  are the refracting powers of the two lenses, and  $c$  and  $d$  the dispersions of the different varieties of glass of which they are made.

If, for instance, we take No. 1 and No. 7 glass, then the ratios between the refractive powers of the two lenses for an achromatic combination will be  $\frac{0.00737}{0.01743}$

If, as is generally the case, we begin by assuming that one of the lenses shall have a certain focus, then it is easy to calculate what the focus of the correcting lens must be.

By combining this formula with that previously given for the correction of spherical aberration, we can see how a

lens free from chromatic and spherical aberration may be made from two given samples of glass.

Assuming, for instance, that we decide to use the first and seventh glass on the list, and that our concave flint lens must have a focus of six inches, then that of the convex crown will be  $\frac{6 \times 0.01743}{0.00737} = 14.2$  inches nearly.

This gives an achromatic combination, but we have still to correct for spherical aberration. Referring to the formula previously given, it will be seen that the values of  $a$  and  $b$  (refractive powers of the two lenses) are known to us, and our table gives us the values of  $c$  and  $d$  (refractive indices of the two materials). The only unknown quantities are then the four curvatures of the two lenses.

But, as in the construction of a lens, we always endeavour to have as few reflecting surfaces as possible, we agree to make one curve of each lens the same, *i.e.*, to make  $f = g$ . This leaves simply three unknown quantities, viz.,  $e$ ,  $h$ , and  $f$ , with the two following equations connecting them.

$$\begin{aligned} (c-1)(e-f) &= a \\ (d-1)(f-h) &= b, \end{aligned}$$

from which the values of  $e$ ,  $h$ , and  $f$  can be easily calculated.

(3) *Astigmatism*.—The above equation just given would, if worked out, give a lens the spherical aberration of which was corrected for rays falling axially or nearly so upon it; but if these rays fell obliquely upon the lens, it would be found impossible to bring them to a focus. This result is called astigmatism, and the existence of the defect is readily proved in the following manner.

Let a photographic lens of any type, and practically free from spherical aberration, be used to obtain an image of the sun on a sheet of cardboard. If the plane of the lens is parallel to the cardboard, and the solar rays approximately at right angles to either, it will be found quite easy to obtain a sharp image. But if the lens be inclined so that its plane makes an angle with the cardboard, it will be found impossible to obtain an image as sharp as before.

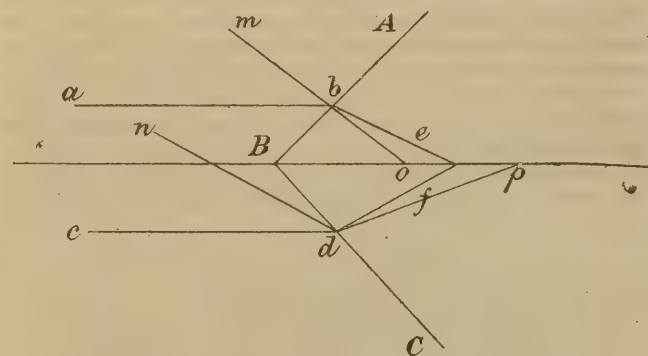


FIG. 4.

Fig. 4 sufficiently explains the reason of this. Let A B C represent the convex side of a lens. Then two parallel rays  $a b$ ,  $c d$ , symmetrically situated with respect to B will be refracted, and take the directions  $b e$ ,  $d f$ , also symmetrically with respect to A B, B O. But if the parallel rays took the direction  $m b$ ,  $n d$ , then the first would be refracted in  $b o$ , the latter in  $d p$ , directions no longer similar for the two faces of the lens. And as the condition of sharpness is that these rays should converge to one and the same point, it is clear that such a condition is fulfilled only when the plane of the lens is at right angles to the direction of the ray.

In practice astigmatism is reduced to a minimum by the use of the stop, which cuts off all rays which are very



oblique to the axis, and by making the curves of the lenses such that the incident and refracted rays make very small angles with the normals to the surface, in other words, the lens is made of as deep a curve as possible.

(4) *Curvature of the Field*.—When photographing a flat surface of any extent parallel to the plane of the lens the image of its central portions is received on the corresponding conjugate focal plane behind the lens, but since the distance from the margins of such a surface to the lens is greater than the distance from its centre to the lens, the conjugate focal plane on which the image of the margins is received should be nearer the lens than that upon which the image of the centre falls. For a similar reason the image of a point on the object nearer the lens than the centre, but further off than the margins, should be caused to form its image at a point behind the lens further off than that upon which the image of the centre is received, but nearer than that which receives the image of the margin.

It can be easily understood that, in consequence of this, to be perfectly sharp the image should be received upon a curved surface. This aberration, depending as it does upon the law of conjugate foci, is not due to spherical aberration; *i.e.*, a lens quite free from the latter might still give a sharp image over only a very small extent of surface.

Curvature of the field is corrected by the use of diaphragms, which act, as previously explained, by increasing the depth of definition, *i.e.*, the extent to which the ground-glass can be moved to and fro without materially affecting the focus.

(5) *Distortion*.—The cause of this has been already explained, and it has also been pointed out that it is usually corrected by placing a suitable diaphragm between two symmetrical lenses, in which case the convex distortion given by the back lens, with the diaphragm in front of it, is exactly corrected by the concave distortion given by the front lens, behind which the diaphragm is situated. So that, provided the lenses are accurately paired, these distortions being in opposite senses, exactly neutralise each other.

It by no means follows, however, that doublets only are free from distortion, for it is quite possible to substitute for the stop a diverging lens, or even by cementing three lenses together to produce a combination quite free from this defect.

(6) *Flare Spot*.—A lens possessing this defect will give negatives having a circular patch at the centre darker than the surrounding portions. The accompanying figure explains the reason of its occurrence. Let *a b c* represent a simple lens, with the diaphragm so placed in front of it that the

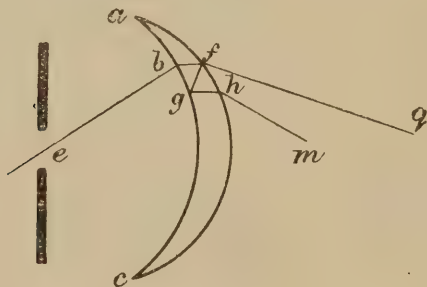


FIG. 5.

point *e* is outside the centre of curvature of the concave side of the lens. Then a portion of a ray *e b* will be refracted towards *b f*, and meet the principal axis at *g*. But another portion will be reflected from the inside of the convex surface *a f* towards *f g*, and again reflected towards *g p*, finally meeting the axis at a point *m*. What is true of a single ray will be true of the circular bundle of rays passing

through the diaphragm aperture, and these will in consequence form an enlarged image of the latter at *m*.

As this image can only be real, in the case in point, when the diaphragm is either at or beyond the centre of curvature, it follows that, to correct it, the diaphragm must be moved so that it is nearer the lens than the centre of curvature of the concave surface, in which case the image becomes virtual, and is not perceived.

The defect can then be corrected by either altering the position of the diaphragm with given degrees of curvature or by altering the degrees of curvatures of the two faces, the position of the diaphragm being fixed. For if, in the previous figure, the concave surface had been made sufficiently flat then it is clear that the ray *p m* would be rendered divergent instead of convergent.

(To be continued.)

## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XI.

THE SENSITIVE PLATE UPON WHICH THE IMAGE IS TO BE IMPRESSED BY LIGHT.

III.—COMPOSITION OF THE SENSITIVE PLATE. THE VISCOUS MATERIAL BY WHICH THE SENSITIVE SUBSTANCE IS CAUSED TO ADHERE TO THE SUPPORT.

We have now considered (1) the support itself, composed at the present day almost invariably of either glass or celluloid; and (2) the substance sensitive to light, invariably silver bromide, sometimes having a little silver iodide mixed with it. We must next examine the manner in which the silver salt is caused to adhere or hold on to the support.

*Herschel Dispenses with a Viscous Material Altogether*.—Sir J. F. W. Herschel, who was the first to use glass plates as a support (in 1839), obtained a coating of silver chloride upon glass by placing the glass plates at the bottom of a vessel of water containing the silver chloride in suspension. The silver salt then settled down gradually upon the glass. But by this method only a thin and rather loose coating of the sensitive substance could be obtained, and it was very liable to fall or rub off. But, worse still, only faint images could be obtained on such plates, and to get even such images a very long exposure in the camera was necessary. For one thing, we see that, with the exception of the small amount of moisture present, there was nothing which could act as a sensitiser.

*No Special Adhesion Needed in the Daguerreotype or in the Calotype Processes*.—In the daguerreotype process a layer of silver iodide is formed upon a surface of silver—of which it is, indeed, a part—and there is no viscous or adhesive substance needed to hold the sensitive salts to its support. It is the same with Talbot's "Calotype" process. The silver iodide is formed upon and within the pores of the paper support, the paper itself being sized. One difficulty, indeed, with photography on paper, is to keep the image sufficiently upon the surface; for, owing to the pores of the paper soaking up or imbibing the sensitive substance, the picture is often more within than upon the paper.

*Albumen used by Niepce de St. Victor to Secure the Sensitive Material to the Support*.—Some aid to the theory that "genius runs in families" may be found in the case of the younger Niepce ("de St. Victor"), who was a relation—cousin or nephew, the French terms for relationship are somewhat puzzling—of he who has the most claims of any man to be styled the father of photography—Joseph Nicéphore Niepce, born 1765, died 1833.



The younger Niepce described his albumen process in 1847. Glass was coated with white of egg (which is a form of albumen), and silver iodide was then formed in the pores of the albumen. The plate, so coated, might be exposed while wet, or it might be dried and kept till wanted. This albumen process was improved by two other Frenchmen—Blanquart Evrard and Le Gray—and probably the finest transparencies ever made were produced in this way by the French firm of Ferrier and Soulier. But for ordinary negative work, the albumen process was terribly slow; ten to twenty minutes was the average exposure required. For *instantaneous* photography this beautiful method was clearly of no use. For lantern-slide making it has, however, been employed with great success.

Albumen is a complex nitrogenous substance. It coagulates when heated to 150 deg. F., or when treated with alcohol. About the year 1852 albumen was introduced as a coating for paper upon which silver prints were to be made; it kept the sensitive salt upon the surface (by filling up the pores of the paper), and its gloss, when dry, gave brilliancy to the print. Countless millions of eggs have been used for this purpose in photography; but since 1882 a liking for dull or matt-surface prints has sprung up, and it is probable that "albumenised paper" has "o'erpassed its halcyon days."

*Collodion as an Adhesive.*—Collodion is made by dissolving a form of gun-cotton in a mixture of ether and alcohol. It was discovered in 1847 by the American chemist, Maynard, and found its first application in surgery, being used to cover any part of the skin which it was desired to protect from the air.

When liquid collodion is poured upon glass the solvents soon evaporate, and a transparent, colourless film is left behind. In this film an English photographer, Frederick Scott Archer, saw (in the year 1851) the very substance needed to cause a substance sensitive to light—such as silver iodide—to adhere to the glass plate. Archer published the collodion process in the pages of a periodical called *The Chemist*, in March 1851. The collodion process quickly became popular, and was universally practised until 1880, when it was displaced by gelatine.

At first the collodion plates were always used *wet* and dripping with silver nitrate, which acted as a sensitiser. When the collodion plate was well washed (to remove this silver nitrate, which would otherwise have crystallised and so spoilt the film) and then dried, it was found to be very *insensitive* to light. This shows that *collodion itself* is not a sensitiser. But when such plates were treated, before drying, with various substances which would act as sensitisers—as pyro, tannin, etc.—the dried plates were more sensitive; though still less sensitive than wet collodion plates.

When collodion *emulsion* was introduced in 1864, the silver bromide displaced the silver iodide; but although the former was much more sensitive to light than the latter salt, it was still found necessary to add some substance, such as tannin, bitter beer, etc., to the emulsion to act as a sensitiser, since the collodion alone was unable to act in this capacity.

*Gelatine is both an Adhesive and a Sensitiser.*—Gelatine is obtained by boiling the parings of the skins, hoofs, etc., of animals. It is soluble in warm, but not in cold, water. Very large quantities of gelatine are made at Messrs. Nelson's works at Leamington; and Coignet's Gold Label (French) and Heinrich's (Swiss) gelatine are well-known brands. When repeatedly boiled, gelatine is changed into a gum-like substance called *meta-gelatine*, which is soluble in cold water. Gelatine keeps well in the dry but not in the moist or damp state.

Most of the early workers with gelatine—during the "seventies"—were wholly unable to appreciate the immense difference between the sensitiveness to light of silver bromide contained in collodion and the same substance embedded in gelatine. Recent researches have shown that it is possible for a gelatine plate to be three hundred times more rapid than a standard wet collodion plate; while, if the comparison be made with collodion *dry* plates, the advantage will be even more on the side of gelatine.

Why is this? It is because gelatine, instead of being a chemically inert substance like collodion, is a sensitiser as well as an adhesive. Not only does the gelatine envelop the particles of silver bromide, holding them firmly to their "support"—the glass plate—but it exercises an attraction for the bromine contained in the silver bromide, and thereby assists the light in effecting a complete or partial separation of the two elements—the silver from the bromine. As a simile, we may compare the components of the silver bromide to a brother and sister walking arm in arm; a robber (light) appears on the scene and attempts to part them, but they cling so closely together that he is unable to succeed, until his companion (gelatine) appears to lend him a helping hand!

(To be continued.)



## The Stereoscope.—XVII.

BY VALENTINE BLANCHARD.

It has already been shown that greater separation can be made between the pictures even with stereoscopes of ordinary make, and that larger pictures can, therefore, be made without seriously taxing their powers. With an eye-piece of short focus, however, this power is very much limited. For example, I have before me whilst I write, a pair of lenses fitted with cardboard so that they can be separated at will. The diameter of each lens is slightly over  $1\frac{1}{2}$  in., and the focal length 6 in. I have separated them exactly  $2\frac{3}{4}$  in. I find on looking at a slide slightly over 3 in. from centre to centre, there is, at the first moment of looking, a little difficulty in making the pictures coalesce, but by moving the lenses a little further apart, the stereoscopic effect is more readily attained. A difficulty in another direction, however, presents itself. The available portion of each lens is limited to  $\frac{3}{4}$  in., for beyond its axis the lens is useless for stereoscopic purposes. It follows, therefore, that when the lenses are separated so as to make them available for pictures with a separation greater than 3 in. from centre to centre, anyone looking through the lenses whose eyes happen to be abnormally close together, would use only the edges of the lenses, and the true stereoscopic effect would be obtained only after a considerable amount of straining of the eyes.

It may be well here to say, in order to prevent any misconception, that in speaking of focus the solar focus or burning image of the sun is at all times meant. The importance of this statement will be seen by any one who watches the amount of racking in and out necessary in order to adjust the stereoscope to requirements of different beholders.

After making a series of experiments with lenses of various focal lengths, and also of various diameters, I have come to the conclusion that whole lenses should not be less than 2 in. in diameter, and that  $2\frac{1}{2}$  in. would be really better; and that their focal length should not be less than 7 in., in order to produce the greatest amount of comfort to the eyes of the beholder.

To make these experiments of real value, I tried the



various lenses and semi-lenses on a considerable number of friends, and had in consequence eyes varying in focal power to experiment upon, so the conclusion arrived at is not due to merely personal observation. After repeated trials, first with whole lenses and then semi-lenses, an overwhelming majority were in favour of semi-lenses. Perhaps the reason is not far to seek. The smallest of the semi-lenses measured  $1\frac{1}{2}$  in. in diameter, and the largest  $1\frac{3}{4}$  in. Now, allowing for the waste of glass on the thin edges in order to square them, the disc out of which the smallest pair of lenses was cut could not have been less than 4 in. in diameter—probably more; and the larger pair were most likely cut from a disc of 5 in. Now, a little reflection will show that the smallest pair, even when mounted close together, had their axes separated 3 in., whilst the largest pair had them  $3\frac{1}{2}$  in. apart. It followed, therefore, that though the eyes most closely set together were fully provided for, the eyes abnormally wide apart could not by any possibility look beyond the axes of the lenses.

I have purposely dwelt at length on the stereoscope itself, for the experiments that have been necessary to make these chapters as complete as possible have taught me that in order to make the stereoscope once more popular greater care will be necessary even in the construction of the cheapest form of the instrument. An examination of a number of the American stereoscopes now regularly imported into England scarcely showed more than two with the eye-pieces sufficiently separated. Now, this is an error so easily avoided that one cannot help being astonished at its occurrence. In the matter of squaring up the semi-lenses with exactness, it is, perhaps, unreasonable to expect this to be perfectly done in an instrument that has travelled so far in order to be sold retail at less than two shillings. Of course, the *ideal* stereoscope cannot be expected at this price, and therefore we must wait patiently for its advent. How much it is needed has been shown to me during the progress of these chapters; for I had not at all realised how completely the stereoscope was unknown to the present generation until I proceeded to use the eyes of my friends for my experiments. Several young artists of mark saw through the instrument for the first time, and their exclamations were quite sufficient answers to the remarks that have been recently made that the views as seen through the stereoscope are altogether false and untrue to nature,—“Why, this is reality! It is nature itself,” and one for a moment forgets there is no colour!” “How powerless all the efforts of even the greatest painter appear after this!” and so on. It may be possible to deceive one eye by the transcript of nature on a flat surface, but never two—except in the stereoscope.

It will please many of the readers of these pages who desire the revival of this most wonderful instrument to know that a few months ago in the city of Copenhagen there was, and probably is now, an exhibition open daily devoted entirely to stereoscopic views. They were arranged in the form of tours, and were regularly advertised. From time to time the views were changed, and the change was duly notified in the papers. My informant, a Danish artist, saw a tour in Egypt when in Copenhagen a short time ago. As all good things must go abroad in order to acquire flavour, it is just possible that in good time we may see such an exhibition in London. The last time I saw anything resembling it was fifteen years ago at a country fair. The price for admission was one penny. In Copenhagen the price was about sixpence! Surely this shows high appreciation. Clearly there is hope for the stereoscope yet.

In conclusion, I cannot do better than give the words of one of the ablest workers for the advancement of photography written with all the enthusiasm occasioned by the

advent of the stereoscope. Professor Hunt, whose well-known work on photography was produced about the time of the first popular introduction of the stereoscope, immediately after the Great Exhibition of 1851, says, at the conclusion of his article on the stereoscope:—

“The magic result of the resolution of two plain pictures into one possessing to the eye the most positive solidity, is so striking when witnessed for the first time, that it appears a deception of the senses. Even when fully accustomed to the phenomena of the stereoscope, there is such an indescribable charm in the beautiful pictures that they are gazed on again and again with increasing admiration. Living forms appear to stand out in all the roundness of life; and where colours have been judiciously applied to the daguerreotype or calotype portrait, it is not possible to conceive a more perfect realisation of the human form than that which stands forth prominently from the background of the stereoscopic picture. Statues, in like manner, are almost realised again in their miniature representations. Architectural piles are seen in all that exactness of proportion and gradation of distance which is, in their minute reproduction, singularly interesting; and in landscapes, the stereoscope gives us a re-formation of every image in apparently the most perfect solidity and truth of distance. In the stereoscope we have at once an instrument which enables us to study many of the phenomena of vision, and to reproduce loved and beautiful objects or interesting scenes through the agency of those rays by which they were illuminated in that strange perfection which in its mimicry of visible external nature almost baffles the examination of the human sense.”



## Studies in Art for Photographers.

BY REV. F. C. LAMBERT, M.A.

### CHAPTER III.

WHILE the subject of lines and curves is fresh in mind, it may be as well to note one or two curious (and sometimes important) effects due chiefly to the direction of lines. For the purposes of this present chapter it is proposed to limit our observations to straight lines.

We have seen that approaching lines (*i.e.*, those which if produced would meet) have a general effect of conveying

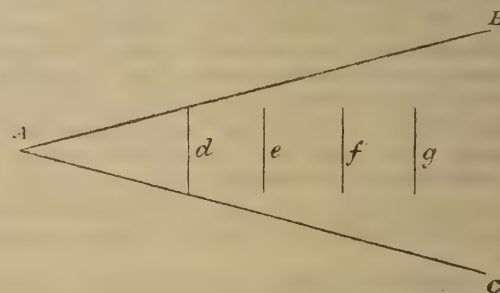


FIG. 5.

the notion of opposition, balance, stability, *i.e.*, kindred impressions varying according to circumstances.

Now, observe that when two converging lines (fig. 5) A B, A C, enclose a considerable space, they have an effect upon other lines which happen to be enclosed within the angle; as, for instance, the four equal and parallel lines, *d*, *e*, *f*, *g*, appear to diminish in the order just mentioned.

Again, where we have a group of convergent lines intersecting other lines, we observe a somewhat similar effect. For instance, in fig. 6, we have a group of converging lines cutting the series of equal and parallel upright lines *a*, *b*, *c*, *d*, *e*. Note that the line *a* is cut into five parts, *b* into four parts, and so on. This seems to account in part for *a* appearing longer than *b*, and *b* longer than *c*, etc.



Another very well-known effect is produced by a series of convergent lines cutting two or more parallel lines. The series of short lines cutting two lines, A D, B E (fig. 7), have the effect of making A D and B E, appear to converge towards A and B; similarly B E and C F appear to converge towards E and F.

It is as well to bear in mind these various and somewhat delusive effects of converging lines, because they may very probably be of material assistance to the picture maker,

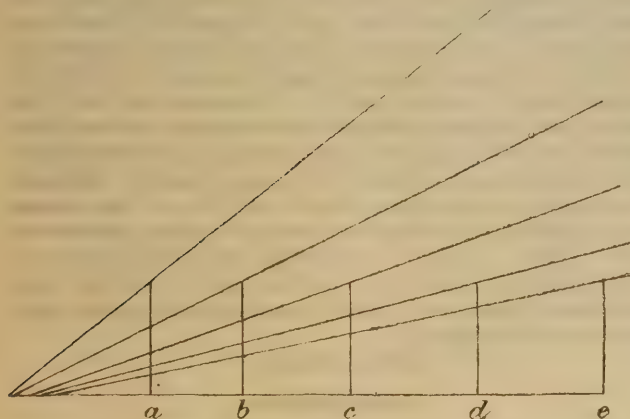


FIG. 6.

either in assisting him to produce a desired effect, or may at another time explain to him the cause of the difficulty he experiences in avoiding undesirable effect.

Before leaving the subject of parallel lines, it will be as well to take note of the effect produced by spaces chiefly occupied by parallel lines. In fig. 8 the space A appears longer than B, while B appears longer than C. On the other hand, C appears higher than B, etc. All three spaces are, of course, equal, although A and C appear not only unequal, but also of different proportions—an effect due to the direction of the lines occupying the spaces.

Again, with respect to relative size of spaces, it is important to notice that our first impressions (we are told to pay the chief attention to our impressions) depend on at least two different elements, viz., relative position and configuration.

This may be exemplified by fig. 9, where we have two irregular figures, A B. Now, at first glance they seem of different sizes, and also different shapes, but are, of course, equal in all respects. It is an interesting and useful experiment to cut out such figures. (Fold any sheet of light-coloured paper, and cut through both thicknesses at once, so getting two equal-sized pieces; the size and shape may be varied very considerably). Study the effect of placing them in various relative positions.

No doubt there are some readers who think this digression tiresome, and apart from the subject of pictorial composition, and yet I venture to ask for a patient consideration of these observations; because a knowledge of what is desirable is frequently contributed to by a knowledge of what is undesirable. What to retain, and what to reject,

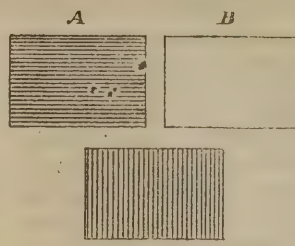


FIG. 8.

more difficult to learn to reject than to retain. The temptation to the photographer is to overcrowd.

As excessive repletion tends to nausea, so overcrowding into a picture of conflicting elements tends to internecine war; wherefore let us all remember the old saw, "Enough is as good as a feast."

are the two pillars upon which the arch of composition must rest.

Furthermore it is often

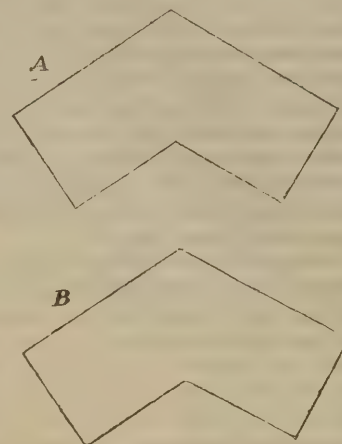


FIG. 9.

(To be continued.)

## Photographic References.

BY MAJOR J. FORTUNÉ NOTT.

(Continued from page 96.)

### EXPOSURE.

To say that this question of exposure is a simple one to understand would be making a statement not justified by facts. Even if its application were limited to experienced photographers it would still be untrue. Any one who employs a camera either for business or pleasure is liable to err on this point every now and again, and extended experience can only lessen the risks of error without being able to prevent mistakes being made occasionally. When calculating the duration of time, under the circumstances which then exist, that should be accorded to the exposure, the photographer has to deal with one factor of a most uncertain quality, namely, the actinic power of the light which is temporarily prevailing. This may vary greatly during the same day without any very great change in the appearance of the weather becoming apparent. Some few hints on the matter which may be of use can be gleaned from books upon the subject; but there is only one correct plan to pursue, and that is to experiment for one's-self and to study in all their bearings any errors which may be made. In this way an experience is soon gained which, although, as before said, can never be infallible, will nevertheless be the very best, or we should say the only guide in which faith can be placed with any degree of certainty. Every photographer becomes therefore in this matter a law unto himself.

The brilliancy of the reflected image on the ground-glass screen, before and after the stop has been inserted in the lens, should be carefully examined and the estimated length of exposure gauged thereby. This is the very best method of getting a starting point for the calculation, mental or otherwise, which has to be made. This will not, of course, give the photographic value of the light, but the circumstances existing on the occasion will supply the missing information near enough for all practical purposes. The differences between the light over a brightly lighted landscape or seascape and that in a well-illuminated interior for the purposes of photography, are easily estimated. To start



from an assumed position—supposing the sensitiveness of the plate, the size of the stop to be used, and the nature of a light over an open landscape, would require one second's exposure, then under the same conditions a seascape with clear horizon would be one quarter of this time, while a scene having heavy foliage in the foreground throwing deep shadows over the place where the camera is situated, might necessitate ten times as long. With interiors there is very much greater latitude. Without they are exceptionally well lighted, it is almost impossible to over-expose them; the tendency is to rather under-expose than otherwise, owing to the patience of the photographer engaged in work of this character not being equal to the strain which giving one hour's exposure or more would place upon it.

The quality of the light during the different seasons of the year and during the variations in the weather common to each period must also be appreciated. This information can also only be acquired by experience and close observation. A bright day in winter will require two or three times as long exposure for the light to exert the same influence on the sensitive plate as the light on a day of similar character in summer. The hour of the day will also cause the time to vary and the light prevailing as a rule a little before sunset, although bright, being very yellow in its predominating tint, has an equally proportionate non-actinic value.

The student is strongly advised to give from the very outset of his photographic career particular attention to this vital matter of exposure, for upon the manner in which he utilised his experience under the varying conditions in which he has worked will depend to a great extent the character of the photographs he produces. The best advice we consider it possible to give when he first begins to employ his camera is this: Get a box of sound, reliable plates made by some well-known manufacturer, and expose them under different conditions of light, hours of the day, and with the lens working with different-sized stops. If careful notes are taken during these experiments, a foundation for that knowledge regarding this subject which is indispensable to a photographer, has been made, and will in every way repay the trifling outlay which it necessitated. Of course, small plates can be used, but the larger they are the better, for several reasons, the most important one being that the various phases of development can be easier seen by the tyro than would be the case if the plate was of very limited proportions. When once the correct exposure has been made, a certain confidence will be established, which will materially assist in guiding the judgment on all subsequent occasions.

As soon as some facility in calculating the duration of the exposure has been acquired, the other circumstances which affect the subject in a minor way can be noted. For instance, the direction of the wind is a matter of some consequence, for if an east wind be the prevailing one, for some reason or another the actinic value of the light suffers a certain diminution. The nature of the clouds, if there are any, and the hue of the sky, have also elements which are worthy of attention. The temperature of the atmosphere is another point which experienced photographers have learnt to consider as of some importance, and the predominating colour of the principal objects in the view is not a point that should be overlooked. The advice to always expose for the shadows is a good one, and so, also, it is a good plan to err rather upon the side of over-exposure than upon under-exposure, for the effects of the one are more easily overcome in the developing room than the other.

It is always well to avoid changing the make of plate to which the photographer has become accustomed; but if circumstances necessitate more or less sensitive ones being employed, the exposure based upon the experience acquired can

be utilised by ascertaining the sensitometer numbers from the maker, and in this way getting the difference in sensitiveness between the two emulsions, and making the necessary allowance. Too much reliance must not, however, be placed upon the readings of the sensitometer as given out by plate manufacturers; they are only of service in making rough guesses at the way in which the plates should be treated. For any other purpose in which greater accuracy is essential, the tests should be made by the operator himself.

A small memorandum book should always be kept in which a record of each exposure is made, together with some information about the light, the nature of the scene, the character of the lens, and the size of the diaphragm, and after the negatives have been developed the kind of result obtained should be stated. When once the habit has been acquired of noting these circumstances no trouble is experienced in keeping such memoranda up to date and in a sufficiently accurate manner to create a book of reference for subsequent consultation which will be of the utmost value in guiding the judgment when difficulties are encountered. Many lessons of a practical character can also be learnt therefrom which can be obtained in no other way, for in several points regarding this subject of exposure practice is opposed to theory.

(To be continued.)



## A Rapid Hydroquinone Developer.

HERR LAINER contributes to *Photographische Correspondenz* some valuable notes on the use of hydroquinone as a developer, which are the results of a series of exhaustive experiments carried out in the usual thorough manner characteristic of all Germans. Herr Lainer incidentally remarks that the addition of yellow prussiate of potash to the pyro and soda developer is certainly to be recommended, and that dense and vigorous negatives can be obtained by the use of this salt, especially with instantaneous exposures. Herr Himly specially recommended the use of this salt with hydroquinone as a means of obtaining density and greater contrast, without the restraining action of bromide. Herr Lainer gives the following formula as one of great reducing power and rapidity:—

### FORMULA No. 1.

#### Solution A.

Hydroquinone	..	..	10 grammes.
Sodium sulphite (neutral)	..	..	25 "
Distilled water	..	..	600 cc.m.

#### Solution B.

Caustic potash (KOH)	..	..	50 grammes.
Distilled water	..	..	100 cc.m.

For a half-plate, mix 60 c.c.m. of Solution A with 3 c.c.m. of Solution B. "This developer developed a sensitometer plate in  $\frac{3}{4}$  minute to 24 deg. Warnerke, with absolute clearness of the negatives. The image appears in about 3 seconds. But not every kind of plate will permit the use of this developer, since many kinds of plates give a grey fog—an observation also made by Eder and Lenhard." The addition of yellow prussiate of potash to the developer gave clear negatives even with those plates which otherwise gave fog, and the following are suggested as the most suitable proportions:—

### FORMULA No. 2.

#### Solution A.

Hydroquinone	..	..	10 grammes.
Potash ferrocyanide	..	..	120 "
Sodium sulphite	..	..	40 "
Distilled water	..	..	900 c.c.m.



*Solution B.*

Caustic potash (KOH)	..	..	50 grammes.
Distilled water	..	..	100 c.cm.

For a half-plate, mix 60 c.cm. of Solution A and 6 c.cm. of Solution B. The image appears in about 3 seconds, and development is complete in 30 to 45 seconds. . . . This developer permits a shorter exposure, brings out the details well in the shadows, and permits of a very quick development.

The use of soda instead of potash gives negatives of a softer character, and the following is an excellent formula :—

## FORMULA No. 3.

*Solution A.*

Hydroquinone	..	..	10 grammes.
Sodium sulphite	..	..	30 "
Potash ferrocyanide	..	..	90 "
Distilled water	..	..	950 c.cm.

*Solution B.*

Caustic soda (NaOH)	..	..	30 grammes.
Distilled water	..	..	90 c.cm.

For a half-plate, mix 60 c.cm. of A and 12 c.cm. of B. For portraiture a somewhat slower working developer is advisable, when the following is excellent :—

## FORMULA No. 4.

*Solution A.*

Hydroquinone	..	..	10 grammes.
Sodium sulphite	..	..	35 "
Potash ferrocyanide	..	..	25 "
Distilled water	..	..	1,000 c.cm.

*Solution B.*

Caustic potash	..	..	50 grammes.
Distilled water	..	..	100 c.cm.

*Solution C.*

Caustic soda	..	..	30 grammes.
Distilled water	..	..	90 c.cm.

For a half-plate, mix Solution A 60 c.cm. with 6 to 9 c.cm. of Solution B, or 10 to 12 c.cm. of Solution C. The image appears in 5 seconds, and is completely developed in 1 to 2 minutes. For convenience in travelling, the following may be used :—

## FORMULA No. 5.

*Solution A.*

Sodium sulphite	..	..	25 to 30 grammes.
Hot distilled water	..	..	100 c.cm.
Hydroquinone	..	..	10 grammes.

Dissolve also—

Potash ferrocyanide	..	..	25 grammes.
Distilled water	..	..	100 c.cm.

and mix.

*Solution B.*

Caustic potash	..	..	50 grammes.
Distilled water	..	..	100 c.cm.

*Solution C.*

Caustic soda	..	..	30 grammes.
Distilled water	..	..	90 c.cm.

For use for a half-plate, mix Solution A, 10 c.cm.; Solution B, 6 to 8 c.cm.; and water, 40 c.cm.; or Solution A, 10 c.cm.; Solution C 10 c.cm.; water, 40 c.cm.

## THE ACTION OF IODINE IN THE HYDROQUINONE AND EIKONOGEN DEVELOPERS.

The following interesting and useful application of iodine in the developer is given by Herr Lainer :—For the following experiments I used a solution of 1 gramme of iodine in 50 c.cm. of spirit, and diluted it with 50 c.cm. of water. 3 to 6 drops of this 1 per cent. solution of iodine, when added

to 30 to 40 c.cm. of hydroquinone developer, acts in a very striking manner. The appearance of the image is, indeed, very much accelerated, the image appears almost instantaneously in all its details, and becomes vigorous only with longer developing, the contrasts are lessened, and, with an illumination poor in contrast or flat working plates, a flattening of the image takes place. As an addition to hard-working hydroquinone developers, the addition of 1 to 3 or 4 drops of the above iodine tincture has proved excellent, and one attains by this means a very beautiful gradation of half-tones; whilst a greater addition equalised the tones, a decrease of the sensitiveness was not observed. Four drops of the iodine tincture in 40 c.cm. of eikonogen developer do not act very strikingly. With and without addition of iodine, 25 deg. W. were obtained with three minutes' development; the addition of iodine, however, increased the clearness of the plates and acted favourably on the gradation; even 10 drops of solution of iodine resulted in no flattening, still, the density of the first numbers was markedly lessened. Iodine tincture in small quantities acts in the eikonogen developer similarly as with the hydroquinone developer, if also not in so vigorous a manner. An acceleration of development is not obtained by the addition of iodine; rather the opposite, since the development must be prolonged to obtain great density.

We have, therefore, in the addition of iodine or iodide of potassium, a very valuable means of being able to act on the character of the negative during the development with oxalate, eikonogen, or pyrogallol. Since one uses a 10 per cent. solution of bromide of potash in order to obtain greater density or more contrast, one obtains with the addition of iodine the opposite effect, and that in varying degrees according to the amount of addition, and also, which is very important, without prejudice to the sensitiveness of the plate.

## Hydroquinone as a Developer.

M. REEB, in a recent communication to the Société Française, gave some novel and valuable scientific information on the action of hydroquinone in connection with sodium sulphite as a developer. We can only give a summary of the paper, and the deductions M. Reeb draws from the same. Hydroquinone possesses great affinity for oxygen, especially in the presence of an alkali or alkaline carbonate, and oxidation is instantaneous in the presence of certain bodies capable of yielding nascent oxygen, such as oxide of silver, the silver being reduced to the metallic state. This reducing action is lower when the silver is combined with any acid, but slowest of all when such acid is a mineral acid. In the presence of an alkali capable of neutralising the acid, however, the reduction is regular and complete. The addition of an alkali accelerates to such an extent the process of oxidation that hydroquinone soon loses its reducing property, this being prevented by the addition of a so-called preservative such as sodium sulphite. By the harmonious combination of these three substances, hydroquinone, alkali, and sodium sulphite, it is possible to produce a perfect developer. To determine this combination, the following three points were examined experimentally—

(1) Determination of the reducing power of hydroquinone.

(2) Determination of the quantities of alkalies and of their carbonates, corresponding to a given quantity of hydroquinone.

(3) Determination of the quantity of sodium sulphite necessary for the perfect working of the developer.

The first determination was experimentally proved, and the result was that 0.08 grammes of hydroquinone completely reduced one gramme of silver nitrate.



The action of sulphite, it was proved, if not greatly in excess, does not prevent the complete reduction of the silver salt to the metallic state. On the other hand, if sodium sulphite be used in excess, the precipitation of the metallic silver is retarded (this is a point we have insisted upon for some considerable time), and the deposit is whitened.

The determination of the second point is very easy, and the following table represents the equivalent quantities of alkalies to be used in combination with 0.08 grammes of hydroquinone for the complete reduction of 1 gramme of silver nitrate.

Potassium hydrate (caustic potash)	0.33 gramme.
Sodium " (caustic soda) ..	0.2353 "
Potassium carbonate .. ..	0.4064 "
Sodium carbonate .. ..	0.8411 "

The determination of the third point is deduced from experiments conducted with a solution founded upon results 1 and 2, thus:—

Hydroquinone .. ..	0.08 gramme.
Potassium hydrate .. ..	0.33 "

Increasing quantities of sodium sulphite were added to this, and the results carefully watched, and M. Reeb gives the following deduction as the result. The proportion of sulphite does not depend only on the quantity of hydroquinone, but first on the ratio between the hydroquinone and its alkali, and afterwards on the choice of this alkali. He adopts the following as two suitable developers:—

Hydroquinone .. ..	1 gramme.
Potassium hydrate .. ..	4 grammes.
Sodium sulphite .. ..	7.5 "

When an alkaline carbonate is used, less sulphite is required.

Hydroquinone .. ..	1 gramme.
Sodium carbonate .. ..	10.5 grammes.
Sodium sulphite .. ..	5 "

The final deductions from these experiments is summarised briefly as follows. The following table represents the most suitable proportions for a developer.

Nitrate of silver, 1 gm.	Hydroquinone '08	Potassium hydrate ...	.33 gm.	Sodium sulphite, '60 gm.
		Sodium " ...	.2353 "	
		Sodium carbonate ...	.8415 gm.	Sodium sulphite, '40 gm.
		Potassium " ...	.4064 "	
Distilled water, sufficient quantity.				

An alkaline (caustic) will be more energetic than a carbonate, and therefore for instantaneous exposures the former is to be preferred, for time saves the latter.

### JACOBY'S CHLORIDE OF SILVER EMULSION PAPER.

MR. OTTO SCHOLZIG, of 31, Binfield Road, Clapham Road, S.W., has taken up the sole agency of the above paper, and has forwarded us samples and instructions. We have given the paper an extensive trial during the last few days of printing weather, and can very highly commend the results which are to be obtained on it. The directions issued with the paper are complete and carefully compiled, and will doubtless prevent many inexperienced operators from making a mess of it. By the introduction of this paper and the use of a particular bath, we have been enabled to obtain a true sepia tone, such as was only hitherto attainable by the use of the carbon process. To the erstwhile disciple of the now defunct impressionist school, this paper will be a veritable boon, and to the lover of warm-toned artistic matt prints we strongly recommend it, as fine detail, warm tones from lemon-yellow to deep chocolate-black, can be obtained at will, and some of our prints with a matt surface are finer than anything we have yet seen in this respect. The supporting paper is of good tough quality, and we have found it less liable, therefore, to tear, etc., in the manipulations; and finally, but not the least important, the support is free from any tint, being pure white, and this will be the only colour stocked, though pink may be obtained to order.

## Notes for Novices.

### THE DIAPHRAGM.

A DEFINITION we once heard given of the term diaphragm was perhaps true if not scientifically correct, and unfortunately that definition too often represents about the extent of the knowledge of the novice about the diaphragm or stop. The explanation was as follows: "The diaphragm is a bit of brass with a hole in it, used to stop out the light and bother photographers." We can remember a time when this was about the extent of our knowledge, so we must try and make this matter plain to novices, and induce a more intelligent use of the diaphragm.

We must first of all state that the term "stop," so often used as synonymous with "diaphragm," is not correct; in general optics the terms are used indiscriminately, but in photographic optics "a stop" is always placed in contact with a lens, whilst "a diaphragm" is some distance from it. We have already considered that part of our subject which deals with "the ratio aperture of the diaphragm," and given instructions how to determine this. We shall now consider the effect of the diaphragm on the image, and as lenses are divided into two classes—(1) single, view or landscape, and (2) doublet, portrait, group, or rectilinear lenses—we must consider the relation of the diaphragm to each lens separately.

#### (1) SINGLE, VIEW OR LANDSCAPE LENSES.

The diaphragm plays an important part in influencing the character transmitted by the single lens in two different ways: (a) by its position, (b) by its size. The influence of "position" is seen in the character of the distortion, the equality of illumination, and the presence or absence of "flare spot;" the influence of "size" is felt in the increase or decrease of exposure, in definition, and depth of focus.

A single or landscape lens cannot be used without a diaphragm, and the correct position is found by the optician. Supposing, however, we place our diaphragm in contact with the lens and make a stop of it, we actually reduce the diameter of the lens to a central patch and the image is found to be sharp in the centre only, the field is very much curved, so much so that curved plates would be a necessity, but there would be no distortion. Now let us remove the diaphragm a little distance in front of the lens, from one-quarter to one-seventh of the focal length; we shall find that our central patch of good definition gradually extends till we are prevented from moving the diaphragm any further because we get contraction of the angle of view, or amount of subject included is lessened and we get barrel-shaped distortion. Now we have seen that placing the diaphragm in contact with the lens gives a very curved field but no distortion, and that the further we remove our diaphragm, the flatter the field and the greater the distortion; it is obvious, therefore, that the best position of the diaphragm is that point which will give us the flattest field with the least distortion, therefore the nearer the diaphragm is to the lens with a good flat field, the better the lens.

The second point is equality of illumination. It must be clearly understood that the light admitted to the centre of the picture or plate is the greatest, whilst that admitted to the margins of the plate is considerably less. This can be very easily understood when we consider that as the rays of light fall more obliquely upon the stop the light is less and less, and also that necessarily the focal length of the marginal pencils is increased when the distance from the diaphragm to the margins of the plate and from the diaphragm to the centre of the plate is measured. The decrease of illumination has been accurately calculated by the late Mr. J. H. Dallmeyer, who gives the following results, which, for convenience, we have put in a tabular form. Let us suppose that the amount of light received by the centre of the plate = 100. Then—

When the angle included is 40 deg., the marginal illumination = 80 deg.	
" " " 50 " " " = 70 "	
" " " 60 " " " = 55 "	
" " " 70 " " " = 45 "	

Therefore the wider the angle, or, in other words, the shorter the focal length, of the lens for a given sized plate, the more unequal the illumination of the centre and the margins of the picture.

"Flare" and "flare-spot" is caused by reflection from the surfaces of the lens, and is usually an image of the aperture of the diaphragm, which may be remedied by alteration of the position



of the diaphragm one-eighth of an inch either way, or sometimes by merely blackening the edges of the aperture itself.

We shall continue our notes on this subject, but at present have reached the limit assigned to us.



**Price, Talbot, and Co., Ltd.** are now selling off a large assortment of photographic goods under cost price; amongst the items to be obtained are quarter-plate and 5 by 4 cameras, with changing backs, at twenty shillings, and half-plate, with changing backs, for thirty shillings. Any amateurs desirous of purchasing apparatus would do well to pay Messrs. Price, Talbot, and Co. a visit.

**Sized Papers.**—Now that so many workers are salting and sensitising their own paper, the following method of determining the nature of the size used on the paper may be of use:—Resin size is evenly distributed in the entire mass of the sheet of paper. Animal size forms two layers entirely separated from each other by the body of the paper. Hence, if the paper is well rubbed and bruised, any characters traced upon it penetrate through if an animal size has been used.

**Prout's Glue.**—A correspondent writes:—"Seeing a paragraph in the *AMATEUR PHOTOGRAPHER* of January 16th, by a brother who had repaired a developing dish with this article, I resolved to try it, with the result that I have nearly cleared my 'hospital' of what I began to think were incurables, and have brought them again into active service. Most workers have broken frames, dishes, etc., to repair, and they would do well to try it. It is in sticks, from 1d. each (much like bottle wax), and melts easily over candle or gas. Care must be taken, however, not to burn it. Directions given with each piece."

**Borax.**—Borax is found, amongst other places, at Saline Valley, on the Eastern slope of the Sierra Nevada Mountains, eleven miles from the line of the Carson and Colorado Railroad Company, and its topographical aspect is best described by comparing it to an immense oval saucer. The crude borax there covers the plain, which is eighteen miles long by twelve miles wide, for an area of over one thousand acres with a depth of from six to eighteen inches. The colour of the crude material as it lies upon the plain is of a peculiar greyish yellow; the borax is mixed with sand, sulphate of soda, carbonate of soda, and salt. The material varies in richness from 10—90 per cent. of borax, the formation being a conglomeration of sand and small crystals of a loose and friable nature.—*Chem. News.*

**An Opportunity.**—The following extract from the *Colonies and India* opens up a new field for photographers, and photographs of the ruins mentioned would be of considerable interest, not only to the antiquarian but to the anthropologist. We commend it to the attention of those of our readers who will be going into the neighbourhood for their holiday:—"Mr. H. B. Sterndale, who passed to and fro among the Pacific Islands with an observant eye a few years ago, has lately been making public the result of his researches among the Cyclopean remains to be found in various parts of the Polynesian archipelagoes. Ponapé, where the Spaniards are now busy carrying on a war of extermination against the unfortunate natives, has long been known to travellers in that region for its curious relics of an earlier civilisation, and evidences of the remains discovered upon Easter Island some years ago are at the present time to be seen in the rude statues which stand at the entrance to the British Museum. Mr. Sterndale appears to have gone still further afield, and in the island of Lele he made some interesting discoveries. Lele is situated in 98° south latitude and 160° east longitude, and is described as a volcanic island, with an extinct volcano scarped and walled to the summit. Here is to be found a wilderness of ruined castles, the walls in some cases 12 ft. thick and from 30 to 40 ft. in height. They are in the form of parallelograms, 200 ft. by 100 ft. for the most part, but some are described as being very much larger. Many of the buildings appear to have been erected upon artificial islets, which are surrounded by canals lined with stone. The theory put forward by Mr. Sterndale is that early Hindoos reached not only Polynesia, but Central America, and he points to the use by the Polynesians of the word *meru* for paradise, and the word *dewa* for spirit, as distinct evidence in support of his contention. Even from the comparatively few archaeological discoveries so far made among the Pacific Islands, there is an abundance of evidence to show that there must be a wide and interesting field for investigation in that part of the world. A great deal of scientific sorting out has been done among the Incan ruins in Peru, and those of the Aztecs in Central America, and perhaps it is due to the insular and scattered position of the various countries spread over the face of the Pacific that we as yet know so little of their peoples and their histories. But while our friends at the Antipodes are busying themselves over Quixotic expeditions to the antarctic regions, it seems somewhat surprising that no organised attempt has yet been made for the examination of the many interesting relics which undoubtedly exist in several parts of the now easily accessible neighbouring islands of Polynesia.

## Quarterly Examinations in Photography.

**Question 10.**—What are the leading factors which regulate the duration of exposure?

**ANSWER.**—The chief factors regulating the length of an exposure are:—

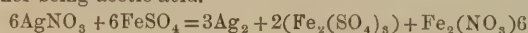
- (1) The nature of the subject to be photographed—its lighting, colour, distance, etc.
- (2) The state of the weather.
- (3) The time of day.
- (4) The time of year.
- (5) The ratio of the diameter of the stop employed to the focal length of the lens.
- (6) The sensitiveness of the plate used.
- (7) If the object photographed is in motion, the rate at which it is moving.

WORFIELD.

**Question 11.**—Is there any difference between wet-plate and dry-plate development? If so, what?

**ANSWER.**—Yes, there is a good deal of difference.

In wet-plate processes, the sensitiser being free nitrate of silver, the image is built up on the face of the film from the free nitrate of silver absorbed by the developer which is deposited on the light-formed compound by the reducing action of the ferrous salt, the restrainer being acetic acid.



is the equation.

In the dry-plate process, the whole of the available silver being contained in the film, the image is formed by the reduction of the silver sub-bromide to a greater or less depth depending on the extent to which light has acted.

Abney says, however, that if silver nitrate be added to the developer a dry plate could be developed by the same method as a wet.

R. C. M.

**Question 12.**—Describe the use and action of a swing-back?

**ANSWER.**—The swing-back is useful in almost every branch of photography, particularly in architectural and landscape work. In architectural photography we generally find it necessary to tilt the camera in an upward position. This naturally causes the vertical lines to converge at the top, but by keeping the swing-back in a perfectly vertical position this evil is remedied. In landscape work we find that to bring the foreground and distance both into focus at the same time, we have to use a small stop, thus losing brilliancy; but by moving the top of the swing-back in an outward direction we are enabled to bring both planes into focus without the disadvantage of using a small diaphragm. The swing-back is also used in the same manner in portraiture and other branches of photography. In theory it is as follows:—The nearer an object from which the rays proceed is to the lens, the longer will be the focus after they pass through the lens; therefore, the rays proceeding from a distant object have a shorter focus than those proceeding from a nearer one. It is, therefore, plainly evident that by swinging the back of the camera, we can bring the plate to the focus of both rays at the same time.—*SUNESIS.*

Answers have been received from, and marks awarded to: A. C. S., Worfield, Lindum, R. C. M., Electra, Biarritz, Sunesis, Developoid, E. B., C., Spain.



A handy little desk Calendar is that sent us by Messrs. McGhie and Co., of Glasgow. It is tastefully got up, and can be either hung upon the wall or made to stand on the table.

The Woodburytype Co., of 157, Great Portland Street, have sent us a copy of a very fine reproduction of Sant's beautiful picture "The Soul's Awakening." It is a marvellous piece of work, and being in carbon is practically permanent. All lovers of Sant's pictures should secure a copy of the print, which is published at 10s. 6d.

The proprietors of the *Photographic Times* (New York) have forwarded to us a very handsome framed Calendar embellished by glimpses of old-time life, which are quite refreshing in these go-ahead days. The method of indicating the day of the month is simple but very effective, and the whole work will form an ornament to any room in which it is placed.

We have received from Mr. Dunmore some specimens of his new kind of Cloud Negatives, which he recommends for general work. The cloud forms are on translucent paper, of very thin texture, and, therefore, the negatives can be printed from either side, a point of considerable convenience. The negatives are reasonable in price and will meet a want.



## Notes from the Liverpool Centre.

(By our District Editor.)

LAST Saturday's annual dinner of the Liverpool Association was a marked success in all departments. The President filled the chair, being supported by Mr. William Tomkinson in the vice-chair, Messrs. T. S. Mayne, Illingworth, Stanistreet, Tunstall, and nearly all the more prominent workers in the Society. During the evening the party was photographed by the flash-light process, Messrs. A. F. Anyon, R. Crowe, and E. M. Tunstall manipulating the apparatus. An experiment, in the shape of having oxy-hydrogen lights at one side of the room to soften down the shadows in the picture, was tried by Mr. Anyon, and, I hear, with very good results. Mr. Wm. Tomkinson and Mr. J. Woolfall, who had the arrangements for the dinner in hand, are to be commended for the unqualified success of the function.

As a matter of local information, I may say that the printed report of the Liverpool Association for the year ending November, 1890, is to hand. It is a substantial pamphlet of thirty pages, and contains much matter of interest. The total strength of the Society is given as 277, including an executive of nineteen officers. Sub-committees number four. Financially, the Society is sound, and shows satisfactory balances. The library embraces about sixty volumes of standard works on photography, besides a large number of serials, annuals, pamphlets, etc. Upwards of thirty meetings, excursions, etc., were held during the year, not including the weekly coffee and other informal gatherings. From January to November inclusive, nearly sixty new members were added to the Society.

With a promptitude scarcely to be expected from officials in a department of Her Majesty's Government, the authorities at the Hydrographical Department of the Admiralty have returned to the Liverpool President the Iceland papers thrown into the North Atlantic Ocean, and subsequently recovered, particulars of which I gave last week. A letter of thanks has also been sent, with an intimation that the facts of the "recovery" are highly interesting and of great value.

Naturally, the exhibition occupies all the interest and spare time of our most active members. The preliminary arrangements are making good progress, and things all round are most auspicious. To date, the number of individual exhibitors present a large increase on that of the 1888 show. On Tuesday a deputation composed of Messrs. Paul Lange, William Tomkinson, and T. S. Mayne had an interview with the Committee of the Arts Section of the Liverpool Corporation to obtain more space in the Walker Gallery rooms. Their efforts were successful, though every inch of the extra space conceded will be required. The Hanging Committee have no light task in placing and cataloguing some 1,500 frames.

On Monday night Mr. Tomkinson gave his "Normandy" lecture at Wavertree, showing 160 slides from his collection taken during an autumn holiday in 1889. There was a large and enthusiastic audience, the lecture room, which holds several hundreds, being packed. The chair was occupied by Mr. John Blythe, one of the most successful of Liverpool's merchants, who expressed his delight and pleasure with the entertainment. Messrs. Archer and Sons worked the lantern arrangements in unusually fine style with their new dissolving lantern and rolling curtain effect, the most perfect I have yet seen. Mr. Tomkinson "christened" his lecture "Adventures of Messrs. Camera, Tripod, and Snapshot; members of the Black Art Club," a name which conjured well and opened the way for many racy jokes.

## Notes from the Edinburgh Centre.

(By our District Editor.)

A CIRCULAR has been issued by the Council of the Edinburgh Photographic Society, to the guarantors of the late Photographic Exhibition in Edinburgh, calling up 25 per cent. of the guarantee fund. The amount of the deficit has not been stated yet, but will probably be communicated to the members of the Society at their next meeting, in the beginning of March.

A litigation has been in progress in Leith Small Debt Court, over a washer for photographic purposes, which, though involving a small amount in money, has given no end of trouble. There is in Leith a small club of ten members, calling themselves the

Leith Photographic Lantern Club, and some time ago they authorised Mr. J. J. Guthrie, one of their number, to get made for them a zinc washer for gun-cotton. Mr. Guthrie is a draughtsman, and in placing his order he gave a sketch of the article which was wanted. When delivered to him, the washer, he said, was not made according to the sketch, and he also objected to the price which was charged for it. The washer was, by order of the Sheriff, examined by a plumber, who, on Tuesday of last week, reported that in his opinion it was made according to the sketch. Evidence was then led as to the circumstances connected with the transaction, after which the Sheriff gave decree as concluded for, with expenses. The case is a warning to amateurs who wish to produce something out of the common—that it is necessary to bind the tradesman down to a definite agreement, and not to trust to his word, because if he misunderstands his instructions he is likely to want the customer to pay for his mistake.

The Royal Scottish Academy Exhibition of the works of living artists, which is an annual spring institution in Edinburgh, was opened last Saturday, in the galleries in which the Photographic Exhibition was recently held. There is a large and a very fair collection of pictures, so far as a hasty glance can show. What is of more consequence, it is quite evident that, no matter how much artists may affect to despise the work of the camera, they are not above taking very substantial aid from it in the outlining of their pictures.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Birmingham.**—The above Society held a lantern evening on Wednesday the 11th inst. The exhibits included slides kindly lent by Messrs. J. B. B. Wellington, Fry and Co., Sands and Hunter, etc. It was announced that the first meeting at the Midland Institute would be held on the 26th inst., when papers on "Shutters" and "Instantaneous Photography" would be given.

**Bradford.**—A meeting was held on the 12th inst., the President (the Rev. T. Mellodey) being in the chair. Mr. Alexander Keighley gave a paper on "Artistic Photography." The lecturer divided his subject on the composition of pictures into the following heads:—(1) Absence of perfect symmetry; (2) Balance of objects; (3) Completeness; (4) Harmony; (5) Breadth of effect; (6) Balance of lines; and (7) Contrast of lines. Each of these heads was dealt with in an exhaustive manner by Mr. Keighley, and sketches and photographs made by the lecturer, as well as photographs by others, were shown to illustrate his remarks. A new detective camera, called the "Pearl," was shown by Mr. George Roberts, and much admired for its completeness and simplicity.

**Brighton.**—At the annual meeting on the 10th inst., Mr. Slingsby Roberts in the chair, the report and balance-sheet were adopted, and the rules were amended, the number of Vice-Presidents being increased to three. The subscription for members resident within the Parliamentary borough of Brighton was increased to 10s. per annum, and for country members to 5s., with an entrance fee of 2s. 6d. The officers for the year were elected as follows:—President, Mr. J. P. Slingsby Roberts; Vice-Presidents, Messrs. Caush, Rean, and Warne; Treasurer, Mr. D. E. Caush; Secretary, Mr. A. H. C. Corder; Committee, Messrs. Bedford, Ford, Graham, Hardcastle, Tate, Webbling, Wicks, and Williamson. The Secretary announced that the prints sent in for competition had been adjudicated upon by Mr. H. P. Robinson, and his awards were: Class II., for the best set of six prints taken during the year 1890: silver medal, "Meta" (Mr. E. J. Bedford); bronze, "Neva" (Mr. A. H. Webbling); ten entries. Class III., for the best set of three prints taken on the excursions: silver, "Dabbler" (Mr. F. Tate); bronze, "Atlas" (Mr. E. J. Bedford); nine entries. Class IV., for the best set of six prints taken on the Brightonian plates: a Taylor's half-plate RR. lens, Mr. E. J. Bedford (4 entries). There was a good show of members' work, fine enlargements being contributed by Messrs. Roberts and Graham; platinotype views in Tasmania, by Mr. H. D. Warne; platinotype views in North Wales, and a 12 by 10 enlargement from a quarter-plate, by Mr. Corder; land-scapes, groups, etc., by Messrs. Bedford and Emery. The exhibition was very successful.

**Bristol.**—On the 13th inst. an ordinary meeting of the Camera Society was held at the University College, when there was a good attendance. In the absence of the President, the Secretary was



voted to the chair. A very interesting demonstration of the "Kallitype Process" was given by Mr. Lavington, assisted by Mr. Baker. A number of prints taken from hand-camera exposures were developed, and the simplicity and economy of the process were much admired. The results were considered to closely resemble platino-type and to be a formidable rival to bromide.

**Bolton.**—On the 11th inst. a very interesting demonstration on "Enlarging on Bromide Paper" was given by Mr. T. Parkinson, sen. From a half-plate negative of the President, Mr. J. Johnston, M.D., a very excellent  $3\frac{1}{2}$  transparency had been made by daylight on a wet collodion plate. An ordinary Ilford plate was used in making the negative  $3\frac{1}{2}$  size, and developed with ferrous oxalate. This negative was then put in the Siopticon lantern, the lens in which was considerably stopped down, and after giving about ten minutes' exposure on a 15 by 12 paper, was developed with ferrous oxalate, beginning with an old solution first and strengthening after with new solution. A fairly satisfactory result followed. A longer exposure would have been better, as slow Eastman's paper was used. Altogether a very pleasant and instructive evening was spent.

**Cardiff.**—An ordinary meeting was held on the 13th inst., Mr. C. F. Gooch in the chair, Messrs. E. J. Howell and Dugald Latty were elected ordinary members. Matters appertaining to the approaching exhibition were fully discussed, and the classes arranged. In addition to the survey of Glamorganshire section, an important feature will be a competition open to the societies of the British empire for a series of lantern slides illustrating any town or district. The prize will be a high-class optical lantern. Ms. Gambier Bolton, F.Z.S., will shortly visit Cardiff, and favour the Society with his interesting lecture on "Animal Photography."

**Carlisle.**—A very successful exhibition of lantern slides was given in the Market Hall, Scotch Street, on the 10th inst. The slides shown were the prize sets which gained the AMATEUR PHOTOGRAPHER Prize Medals in 1890, numbering 160 slides, comprising landscape, seascape, figure, and architecture, and were excellent examples of all the qualities which go to make good lantern transparencies. Accompanying each set was a slide of the worker who had produced them.

**Croydon.**—At the meeting on the 16th inst., the President in the chair, Mr. J. F. Fielder and Mr. S. P. Phillips were elected members. The dinner to celebrate the first anniversary of the foundation of the Club will be held at the Greyhound Hotel on Monday, March 9th, at 8 p.m. Members desiring tickets are requested to make early application to Mr. White. "The Book of the Lantern," by T. C. Hepworth, was presented to the library by the President. About 200 members' slides were passed through the lantern, the most noteworthy being some exceptionally fine microscopic photographs taken by means of polarised light, by Mr. C. F. Oakley.

**Darlington.**—The usual monthly meeting was held on the 11th inst. In the absence of the President, Mr. E. Ensor presided over a good attendance. The American slides were thrown on the screen by means of a powerful lantern, and were much enjoyed. The annual conversation and exhibition is to be held in the Mechanics' Hall on February 27th.

**Dundee.**—The meeting on the 12th inst., Mr. J. D. Cox, President, in the chair, being a lantern evening, was an open one. The members and their friends were shown a large number of slides illustrating Brittany, made by Mr. A. R. Dresser. The general excellence was high and a great many deservedly applauded. Several of Griffiths' hand-cameras were sent for exhibition, and seemed excellent value for the moderate price. Two of the cameras had been tested before the meeting and found to give exceedingly good results.

**Glenalmond.**—At the first business meeting of the term, held on the 6th inst., the following new officers were elected:—President, Arthur S. Reid, M.A., F.G.S.; Secretary, C. F. Scobell; Treasurer, H. Cunningham Craig. The following new members were enrolled: Dr. D. Welsh, M.D., B.Sc.; Messrs. J. Shiell, H. de Putron, and C. ap R. Pryce.

**Hackney.**—On the 12th inst. Mr. Henry Sturmev gave a very interesting and amusing lecture on "Norway," before a very large attendance of the members. He described his trip there fully. Many of the slides shown were exceedingly pretty, and some were rather humorous. About one hundred slides were put through the lantern, and Messrs. Dean, Gosling, Barton, and Herbert Smith showed slides. The Society now is just on the century as far as members go.

**Haltwhistle.**—A special meeting was held on the 9th inst. for the purpose of exhibiting the AMATEUR PHOTOGRAPHER 1890 Prize Competition slides. There was a large attendance of members and their friends. The President (Mr. Joicey) occupied the chair, Dr. Spiers read the description of the slides, and the Secretary manipulated the oxy-hydrogen lantern. The audience were very highly gratified; the genre and architectural classes were most appreciated.

**Harlesden and Willesden.**—A meeting was held on the 10th inst., Mr. J. Naylor, President, in the chair. Mr. Goshawk gave a demonstration upon "Retouching." The Society have decided to shortly give a lantern and musical entertainment.

**Huddersfield.**—The above Society held its ordinary meeting on the 10th inst., the President, Surgeon-Major Foster, in the chair, when the American slides were put through the lantern and thoroughly enjoyed by an appreciative audience.

**Ikeston.**—This Society gave its first lantern exhibition on the 13th inst., in the Independent schoolroom, before a crowded audience representing the leading families of the place. Dr. Carroll, the President of the Society, was in the chair. The "American Slides" were exhibited by Mr. Geo. Woolliscroft (Treasurer), by means of his powerful oxy-hydrogen lantern, the description being given by Mr. W. Shakspeare (Hon. Sec.) The slides were greatly admired, as well as some local slides by Messrs. Woolliscroft and Shakspeare. The exhibition was so successful that it is intended to hold another one before long.

**Ireland.**—The annual general meeting was held on the 13th inst., Professor J. Alfred Scott, M.B., Vice-President, in the chair. The report of Council and Treasurer's statement of accounts were read, and showed the Society to be both numerically and financially in a flourishing condition. After the necessary business in connection with the election of officers and council for the ensuing year had been transacted, a number of slides of pictures in Switzerland, the work of Dr. Cosgrave and Mr. Greenwood Pim, were passed through the lantern, and explained by the latter gentlemen.

**Isle of Thanet.**—In the presence of a large audience, at the Parish Hall, Broad Street, the members of this young but energetic Society gave a competitive exhibition of lantern slides on the 12th inst. The slides were principally illustrative of scenery of the Isle of Thanet, but, by the introduction of views of foreign places, and some microscopic slides, considerable variety was obtained, and the audience spent an exceedingly pleasant as well as instructive evening. First were shown some reproductions of famous paintings and engravings, the slides being kindly lent by Mr. Tweedie, of Margate, and then a number of local views by Messrs. G. F. Blower, E. Deacon, F. Deacon, T. J. Dutton, and others. The former gentleman's views of Ramsgate by day and by night (the latter showing extensive illuminations) were exceptionally good. Mr. F. Deacon's "Pegwell Bay Frozen" (two views) were cleverly done and effectively shown, and Mr. E. Deacon's various sea pieces came in for a great deal of highly deserved approbation. In the picturesque neighbourhood of King's Lynn, Mr. Dutton had made some very pretty photographs, which, as shown on the sheet, were much appreciated by the audience. Other noticeable features were Mr. F. Deacon's views of Sturry, and Mr. E. Deacon's effective picture called "Fire," disclosing the local volunteers evidently in the midst of the horrors of war. Amongst the other noteworthy photographs were Canterbury Cathedral interior by Mr. H. G. Holloway, jun., Quex Chapel by Mr. Blower, and some capital Continental pieces by Mr. J. Roe, B.A., and the Vicar, who is the President of the Society and who throughout the evening explained the various views. Some beautiful microscopic slides by Mr. Vigar were also shown and came in for considerable admiration. The chief event of the evening was the announcement of the result of the competition amongst members of the Society. The Editor of the AMATEUR PHOTOGRAPHER was the judge, the names of the competitors being unknown to him, the specimens being sent in under *noms de plume*. The Vicar read a letter from the judge, who announced that he had passed the whole of the specimen slides through a lantern and awarded prizes as follows:—1st, Mr. G. F. Blower; 2nd, Mr. F. Deacon; 3rd, Mr. Edgar Deacon. The Committee's own prize was won by the Rev. C. E. Eastgate. Upon the result being declared, the names of the winners were very warmly applauded. Subsequently the prize photographs were thrown on the sheet, those by Messrs. Blower, F. Deacon, and E. Deacon showing great merit and being particularly admired. Mr. Blower's best piece, "Home, sweet Home" was splendidly done. The slides sent in by unsuccessful competitors were also shown, and of these the contributions of Messrs. H. Jarratt, A. D. Sackett, and Pearce gave evidence of considerable care and skill. Selections of music were given at intervals.

**Kendal.**—The monthly meeting was held on the 11th inst., Mr. F. Wilson in the chair. In addition to a good attendance of members a number of visitors were attracted by the special business, which consisted of viewing and adjudicating on a series of lantern slides sent for competition by the members. These consisted of sets of six. The awards were for the best set and for the best single slide. Twelve members competed, and the slides, as a whole, were considered superior to those of previous years. In both the sets and single slides the running was very near. Mr. C. E. Greenhall obtained first place for the best set, and Mr. G. Gilkes the first place for the best single slide. The prize slides of the AMATEUR PHOTOGRAPHER Lantern Slide Competition 1890, numbering over 170, were shown, and particulars of each slide, regarding exposure, plate, developer, etc., were given. The exhibition is a highly instructive one for amateur photographers, and one which they appeared to greatly prize and appreciate. Regret was felt that more time could not have been spent over it.



**Lantern Society.**—At the meeting on the 9th inst., Mr. J. Traill Taylor read a paper on "Lenses and Condensers for Lantern Work." Mr. Taylor commenced by saying that in his remarks on condensers the light was assumed to be small and intense. At present there was no perfect condenser on the market, and the subject was one that might profitably be worked out further than it had yet been. Mr. E. M. Nelson was the only Englishman who had as yet tackled the subject. In America they had given much more attention to the matter. The back lens of a condenser should be fairly large, so as to include as wide an angle as possible, and as thin as possible on account of the heat, the edges being ground thin for the same reason. The effective diameter of the back lens was considerably less than the diameter of the lens itself, and in the ordinary commercial condenser the margin of the lens to the extent of about half an inch inwards was not utilised. Mr. Taylor showed a drawing of a theoretically perfect condenser to transmit absolutely parallel rays from a small luminant. It was of triple form, and five inches in diameter. He also described Professor Morton's triple condenser, which included an angle of 93 degrees, and he gave the curves for both these condensers. In a perfect lantern the third lens of the condenser (the one farthest from the light) should be removable and of different focal lengths. The first two lenses would be arranged to give parallel rays, which could then be converged more or less according to the purpose for which they were to be used by the third lens. With reference to lenses, Mr. Taylor said that the Petzval portrait lens was the best form, and explained how the flatness of field could be improved by increasing the negative aberration of the back lens. In the discussion which followed, Mr. G. R. Baker referred to the focal lengths of lantern condensers, and Mr. E. M. Nelson mentioned Professor Abbé's theorem that the intensity of the light at different distances from the condensers varied as the square of the sine of half the angle included.

**Manchester.**—The monthly meeting was held on the 12th inst., when a paper on "Astronomical Photography" was read by Mr. Samuel Okell. The first attempts were on daguerreotype plates, the subject being the moon, but it was not until after the introduction of collodion that Warren De La Rue obtained successful pictures. His efforts were followed by others, but the climax of lunar photography has been attained in America, under Mr. Commons, by the great Lick telescope, which takes direct lunar pictures six inches in diameter. The sun, which is now photographed in the one-hundred-thousandth part of a second, was photographed at the time of eclipse in July, 1851. Mr. De La Rue followed, and was successful in showing the red protuberances, and Mr. Alfred Brothers, of Manchester, was successful in 1870 in securing photographs at Syracuse of the solar corona in a manner not previously attained. His method has since been generally adopted. After reviewing the progress in the interval, Mr. Okell mentioned that in 1882 a splendid comet was photographed in the southern heavens by Mr. Gill, and the result, when sent to London, excited the wonder of astronomers, for not only was the comet shown, but a background of stars also, and faint ones down to the ninth magnitude were shown even through the comet's tail. Mr. Commons remarked that this photograph "came as a revelation of the power of photography," and others welcomed it as a new-found power. Scientific men were soon engaged in various parts of the world, and by 1885 the old method of charting the stars had disappeared and photography had taken its place. The old charting had accurately placed 324,198 stars, but the telescope, aided by photography, which discovers stars before invisible to the eye, shows some twenty millions of stars in the entire heavens. Not only is the star photograph more accurate than any observation, but the degree of brightness by which astronomers classify the stars is accurately recorded, for a star of any given order emits just  $2\frac{1}{2}$  times as much light as the next magnitude below it, and one of the 16th magnitude is, therefore, a million times fainter than one of the first. Mr. Okell then spoke of the photographing of nebulae and clusters, and concluded a most interesting lecture by showing on the screen, by means of the optical lantern, a striking series of solar, lunar, and stellar photographs. At a later stage of the meeting the Chairman drew attention to the reported discovery of the long-wished-for photography in colours, reading a portion of the communication to the *Daily News* from Paris. Mr. Brothers said he had seen the report in the papers, and as the method of the French philosopher was indicated pretty fully in the article, he had that day made some experiments by photographing in the way indicated, some strips of stained glass. He had got no colour, but plenty of fog. Other speakers followed, all of whom expressed entire disbelief in the alleged discovery.

**Pudsey.**—A meeting held on the 12th inst. resulted in the formation of a new Society under the above title. Twelve members gave in their names, and there is every prospect of soon having a strong membership. A hearty invitation is given to all interested to attend the next meeting on the 24th inst., at which a splendid lantern and numerous slides will be in requisition.

**Richmond.**—At the meeting on the 13th inst. there was a good

muster of members. Mr. Cembrano presided. The promised demonstration of the "Collodio-Bromide Process" by Mr. Hussey, was unavoidably postponed till next week, in consequence of that gentleman's indisposition, and a discussion on "Exposure and Exposure Tables" was substituted. Most of those present contributed to the discussion, from the tyro who confessed that he had no ideas on the subject which could be of the smallest use to any one else, to the veteran of wet-plate days who looked upon exposure tables much as a man looks upon swimming corks who has learnt swimming without them. The longest exposure on record was stated to be one of several months, given to a dry collodion plate in the Catacombs, while the shortest went into thousands of a second. Two new members were elected.

**Rotherham.**—The second annual exhibition was held on the 10th inst., in the St. George's Hall, Rotherham, and proved exceedingly successful. On the three sides of the concert-room specimens of work, executed in platinum, argentic bromide, Obernetter, and other processes, were displayed, considerable judgment having been exercised with regard to the arrangement. Conspicuous among the frames were a fine collection lent by the Sheffield Photographic Society, which from the first has shown a warm interest in the welfare of its near neighbour. The local examples of the photographic art were a testimony to the progress made in so brief a period, and it was generally very commendable. The Treasurer (Mr. J. Leadbeater) had a number of photo-micrographs of a large size on exhibition. Later in the evening a number of members' slides were projected on the screen by means of the Treasurer's biennial limelight lantern. This part of the proceedings was much enjoyed. At intervals selections of music were given.

**Stockton.**—The ordinary meeting was held on the 10th inst., Dr. Stainthorpe (President) in the chair. The first of a series of monthly competitions was held, the subject being "A Lantern Slide." Eleven competitors entered, and Mr. Woolman was declared to have received the largest number of marks. The AMATEUR PHOTOGRAPHER Monthly Competition prints "River and Seascape Scenery" were on view, together with the Prize Stereo Slides; both sets were very much admired, particularly the stereo views by Captain de Crespigny, whose mounts had a very fine effect. Are they to be procured in England? If so, where? The Secretary (Mr. Ellam Yarn) would be much obliged for the information. Four new members were elected and five proposed.

**The Photographic Society.**—The annual meeting was held in the new rooms, 50, Great Russell Street, Bloomsbury, W.C., on the 10th inst., the President (Mr. J. Glaisher, F.R.S.) in the chair. In opening the proceedings the President congratulated the Society on possessing a home of its own. Captain Mantell, R.E., the Hon. Secretary, then read the report of the Council. Twelve papers had been read during the year, and the exhibition had been on the whole satisfactory. The scheme for the formation of a Photographic Institute had made some progress. All the metropolitan and Provincial photographic societies had been communicated with and invited to give their opinion upon a report that had been circulated amongst them. In moving the adoption of the report, Mr. E. Mackie drew attention to the unsatisfactory nature of the technical meetings, and asked whether steps could not be taken to improve them. He also thought that the Council should be larger, so that it might contain more representative men. Mr. T. E. Freshwater also referred to the matter of the technical meetings, and the President promised that the Council would take the matter under its consideration. Mr. W. S. Bird, the Treasurer, then read his financial statement, in the course of which he said that the membership had increased considerably during the past year. He thought it might be advisable to endeavour to affiliate all existing photographic associations with the parent society. Mr. A. Mackie enquired whether the rumoured photographic exhibition would not injure the Society's exhibition, and expressed his opinion that the expenses connected with the journal ought to be curtailed. Mr. L. M. Biden thought that more lantern nights should be given at the exhibition, and considered that the Journal should be improved and illustrated. In moving a vote of thanks to the President, Mr. Sebastian Davis said he could not help thinking that their present prosperity was due to the assiduity, the energy, and the experience of Mr. Glaisher. He had been connected with the Society for twenty-three years, and was therefore able to speak of the zeal and ability which the President threw into everything with which he was connected. He might say that it had been the warmest desire of the President for many years that they should have a home of its own. The President, in reply, referred to the past history of the society, and remarked that there was plenty of room for the extension of the operations of the society, and suggested the giving of lectures on various subjects. A discussion then arose upon the Journal, Mr. W. E. Debenham saying that he would like to see the Journal illustrated like some of the German periodicals. Mr. L. W. Biden asked whether it would not be possible to confederate the various photographic societies throughout all England, and asked permission to convene a



meeting of delegates from the various societies in the society's rooms. The Hon. Sec. stated that the Assistant Secretary would endeavour to put the technical meetings upon a more satisfactory footing. Mr. R. Robinson suggested that it was desirable that an attempt should be made to obtain all the old medal pictures, as they would form an interesting collection, illustrative of the progress of photographic art. The Hon. Sec. said that Mr. Warnerke had undertaken to give a lecture on an extra meeting night, and it was hoped that this lecture would be followed by others. Mr. L. Warnerke said that in undertaking to give this lecture at a special meeting he hoped that it would be a kind of introduction to what would probably take place if the Institute should be founded. After some further conversation about the technical meetings and the library, the proceedings terminated. The result of the election was as follows:—President: J. Glaisher, F.R.S., F.R.A.S. Vice-Presidents: Capt. W. de W. Abney, C.B., R.E., F.R.S., T. Sebastian Davis, F.C.S., H. P. Robinson, J. Spiller, F.C.S., F.I.C. Council: W. Ackland, G. L. Addenbrooke, W. Bedford, V. Blanchard, F. Cobb, A. Cowan, T. R. Dallmeyer, Major L. Darwin, R.E., G. Davison, W. E. Debenham, W. England, J. Gale, F. Hollyer, F. Ince, G. Lindsay Johnson, M.B., H. Chapman Jones, F.C.S., F.I.C., Capt. A. M. Mantell, R.E., J. W. Swan, M.A., F.C.S., J. Traill Taylor, L. Warnerke, Sir H. Trueman Wood, M.A.

**Toynbee.**—At a meeting held on the 10th inst., samples of the Barnet dry-plates kindly sent by Messrs. Elliott and Co. were distributed among the members. The specimen print sent with the plates seems to show that they were specially adapted for rapid work. A sample of Dr. M. Andresen's eikonogen developer was kindly sent by Messrs. Marion and Co. The developer is supplied mixed ready for use and packed in cartridge-shaped cases; it simply requires dissolving in water. For tourists nothing could be more desirable. The developer gave very great satisfaction to the members who used it during the evening.

**Tunbridge Wells.**—The ordinary monthly meeting was held on the 12th inst., the President (Mr. F. G. Smart) in the chair. The correspondence was read, which included a communication from the Photographic Society of Great Britain, in reference to the proposed Photographic Institute, but it was considered that the Association was not in a position to assist financially, and it appeared to be more for the professional than the amateur worker. And with regard to the National Photographic Exhibition to be held at the Crystal Palace in April, members were not inclined to join in the competition for the challenge cup, as professionals were competing in other societies. The bronze medal given by Sir David Salomons, Bart., and the AMATEUR PHOTOGRAPHER Silver medal were much admired. The lantern entertainment which was organised to assist in covering the loss sustained by the bad weather during the exhibition, was a decided success, and materially lowered the deficit, which was still further reduced by the generosity of the patron, Sir David Salomons, Bart., and the President, Mr. F. G. Smart. The Hon. Secretary laid on the table copies of "Scraps," and one of Dr. Andresen's eikonogen cartridges, which is a special form of carrying a developer when travelling; also a description of a new hand-camera, "The Radial," brought out by Messrs. Marion, and forwarded by them. Mr. Cassingham brought several novelties—Adams' lantern-slide frame, an ingenious contrivance for printing lantern-slides by contact from any size negative; Cameron's tripod-screw and plumb-bob combined; an American pattern stereoscope; Tylar's print-hangers. But the principal item of interest was a stereoscopic hand-camera, holding twenty-four half-plates, without sheaths or backing of any kind, and by an ingenious arrangement any one of the twenty-four plates could be exposed at will. The camera was fitted with a pair of Wray's lenses, Thornton-Pickard shutter, and by removing sliding front and partition it could be used as an ordinary half-plate camera: any less from 4 in. to 7 in. focus could be used on it. Another special advantage over nearly all other hand-cameras was in being able to focus exactly the same as an ordinary camera on a screen inside, so that there was no guesswork as to the amount of subject included, or as to its being in correct focus. A collection of stereo-transparencies taken with the camera were passed round for inspection, and were much admired. Mr. F. W. Burton was thanked for his kindness in giving a landscape picture painted by himself, as a first prize in the landscape class at the last exhibition.

**West London.**—An ordinary meeting was held on the 13th inst. The President announced receipt of a circular from the Crystal Palace authorities of the rules and classes for the forthcoming Photographic Exhibition, and thought the Society might enter for the challenge cup. A circular from the Photographic Society of Great Britain, asking for the opinion of the members as to a Photographic Institute, was handed round, but discussion was deferred until members had had an opportunity of studying it. The President then announced that he had forwarded a circular, *re* cheap riding fares to photographers, to forty-nine London and suburban photographic societies for their consideration, and requesting them to fill up same, with number of members, and to lay it before their

next meeting, and say whether their names might be added to the memorial which was to be lodged with the several London railways. A favourable answer had already been received from two societies. The question from the question box, which was held over from the previous meeting, as to whether ammonia fumes injuriously affected the lungs, was answered by Dr. Low, who said that, considering the extent to which the ammonia was diluted before use in the developing bath, he did not think any harm could be caused to the lungs, but it might, perhaps, have an effect on the eyes. The President then introduced Mr. Wm. Schooling, F.R.A.S., to the meeting, who gave a very interesting lecture on the "Application of Photography to Astronomy," illustrated with slides from photographs taken at the Harvard and other large observatories. Mr. Schooling said that photography had not helped them much with regard to the detail on the surface of the moon and the spots on the sun; in fact, more truthful effects were got with sketches; but that with regard to distant stars, some of them were rendered with great exactitude on the photographic plate when not visible to the eye through the most powerful telescope in use. Mr. Whiting thought that astronomers might, with advantage, turn their attention to the discovering of some emulsion which would give a less coarse image than that given by gelatine, and suggested slower plates, and thought that at the present time albumen would be the best thing to use. Mr. Schooling said that, owing to the movement of the planets, it was necessary to use as rapid a plate as possible. A cordial vote of thanks to the lecturer terminated the proceedings. The next meeting, a lantern evening, will take place on the 27th inst.

**Wolverhampton.**—The monthly meeting was held on the 10th inst. The President, T. Ironmonger, Esq., occupied the chair. A letter was read from the Photographic Society of Great Britain respecting a proposed Photographic Institute. The matter was left in the hands of the Secretary. Mr. Lee, jun., was admitted a member of the society. It was decided to hold the annual meeting on March 24th, at which a resolution will be submitted respecting the alteration of rules, with the object of throwing the society open to amateur and professional photographers. Mr. J. Gale gave an interesting lecture on "Ainsworth's Boscobel," illustrated with lantern slides. The lecturer described the places of interest connected with the battle of Worcester and Charles II.'s wanderings after the loss of the battle. Slides of White Ladies Abbey, Hobbie Grange, Madeley, Evelith, Boscobel, Moseley Old Hall, etc., were thrown upon the screen, these being a few of the places visited by Charles II. during his flight to the coast. A few slides were put through the lantern, made by Mr. Charles Ironmonger, which he had sent from Melbourne, showing a few of the public buildings in that city.

**Portfolio Club.**—Mr. W. H. Whittard writes:—"I am desirous of joining a portfolio club for the interchange of prints, etc., and thought if you would kindly insert this letter in your next issue, it would be the most speedy means of bringing me into communication with some club which has a vacancy." Letters can be sent to Mr. Whittard, care of the Editor.

**Photographing the Larynx.**—Dr. R. Wagner has been successful in obtaining some excellent photographs of the human larynx, 9 by 12 mm. in size, by means of a magnesium lamp and the ordinary laryngoscope, the camera and lens being fixed behind the aperture of the mirror. This is by no means the first time this feat has been accomplished, however.

**Mounting Glazed Prints.**—A correspondent writes: "Having seen several inquiries and statements in your paper recently as to the best method of mounting gelatino-chloride prints, the following, which I have lately hit upon, may be of use to other amateurs, and, therefore, I send it for insertion, should you think it worth doing so. It is simply to coat the edges of the print one-eighth of an inch all round with Le Page's liquid glue, and press it on to the mount, to which it adheres with great tenacity; being colourless and requiring no heating, it does not cockle or affect the print in any way, which lies perfectly flat and retains its fine gloss. It also sticks at once, but not too rapidly, to allow the print to be adjusted on the mount."

**Mercuriography.**—M. Villon has just discovered a new application of mercury and its salts to photogravure, which is likely to be of value to the artist and photo-mechanical printer, and it is founded on the facts that (1) mercury possesses the property of attacking all metals except iron and platinum, and forms amalgams with the same; and (2) that the amalgamated places of a metal plate will not take a fatty ink. The mercury is used either in the form of an ink with brush and pen, or can be made up into crayons, and thus used to draw at once upon the zinc. The full directions are far too copious to reproduce here, but the process is applicable to every one of the photo-mechanical processes in which a metal plate is used as the matrix. It is also applicable for etching, gilding, and silvering glass.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

**4511. Hydroquinone, Concentrated Formula Wanted.**—I have been using a hydroquinone developer sold by Wood and Co., Strand, and found it most excellent. Can any one give me a formula to make it? Its advantage is in being so much more concentrated than any formula I have yet seen, 60 minims of each of the two solutions being enough for the normal developer for half-plate. I want, if not that one, at any rate a concentrated quinol developer, and one that will keep well.—**BROWN.**

**4512. Coating Waste Plates.**—Will any one tell me how I can simply coat my wasted plates to produce positive transparencies? I have tried gelatine salted and then sensitised in silver bath, but the result is miserably poor. How is this? Why will they not print as well as on paper, and how must I amend the process to obtain successful results without resort to development?—**PUZZLED.**

**4513. Reblacking Diaphragms.**—By constant wear my diaphragms are worn bright, which causes a flare. Would some kind reader inform me how I can reblack same?—**BERKSHIRE.**

**4514. Shutter for Detective Camera.**—Can any one tell me the make of shutter to go inside detective camera for half-plate, to be fitted about one inch from the film, using Eastman's roll holder? It must have regulation for instantaneous exposures.—**PHILIPS.**

**4515. Photographing on the Continent.**—Can any of your readers give me trustworthy information from recent personal experience as to facilities for, or hindrances in the way of photographing in any of the following towns or their neighbourhood: Ostend, Bruges, Zurich, Innsbruck, Triente, Verona, Venice, Riva, Milan, Como, Menaggio, Lugano, Bellinzona, Lucerne, Strasburg, Ghent? I do not care for any second-hand or merely general information.—**L. M.**

**4516. Lens and Camera.**—Would some one kindly tell me which is considered the best and most useful lens (half-plate) for all kinds of work, and the maker's name? Also of a good and cheap half-plate camera?—**L. N. H.**

**4517. Relief Seals from Photographic Negatives.**—I have seen described a mode of preparing relief seals from photographic negatives by means of bi-chromated gelatine which is made to swell up and then hardened so as to allow of a plaster cast being taken from which an electrotype copy forming a seal is made. Can any correspondent (1) give a reference to any paper or book which contains the description required, or (2) himself describe such a method?—**HENRY WILES.**

**4518. Photographic Apparatus for India.**—Enquirer, who is about to go out to Assam, India, for a number of years, would feel greatly obliged for any advice concerning the choice of a set of photographic apparatus—particularly as regards the construction of camera, slides, and tripod—suitable for the climate, ratio of exposures as compared with those made here, purchase of photographic materials, etc.—**J. W. BOOTHMAN.**

**4519. Frames for Quarter-plates.**—I did not make my question plain enough. I want frames for quarter-plate prints or opals. Either plush or wood will do, but I have been unable to get any sort of frame to fit quarter-plate; nothing seems to be sold but carte-de-visite size.—**F. PARTRIDGE.**

**4520. Hand-Camera.**—Can you tell me of or refer

me to any book how to make a hand camera to hold twelve plates, not in dark slides? It is the charging of the plate I can't see exactly.—**R. N. BREALEY.**

**4521. Interior.**—Will some reader kindly inform me what lens I should use for photographing interiors of railway saloon carriages, 50 ft. long and 9 ft. 6 in. wide? I have a Ross portable symmetrical lens No. 8, and 15 by 12 camera, but this I find is not very satisfactory; the part of carriage near the lens is much too large, and the end of the carriage much too small, that is, the perspective is too great.—**DEAF.**

**4522. Robinson's Developer.**—I have recently been using this developer—for formula please see **AMATEUR PHOTOGRAPHER** for August 29th last, page 158—but have not been so successful with it as I should like, my chief failure being want of density. In developing a plate I obtain plenty of detail with apparent density, but on fixing, I find the negative very thin, while by prolonging the development the plate becomes veiled with a green (by reflected light) fog. Will some one who has used this developer with greater success kindly suggest a remedy, and thus greatly assist—**ONE WHO IS FOGGED?**

**4523. Platinotype, Sepia Tones.**—(1) Would some one please say if sepia tones, similar to sepia-toned platinum paper tones, can be got by the addition of mercuric chloride to the developer, or can good warm tones be got? Please give formula, and say if it is better to use the oxalate developer or the cold-bath developing salts. (2) Are the Company now making smooth surface sepia-toned paper? (3) How are the pearly-blue black tones got on the black paper? They have a much nicer quality than the ordinary grey blacks.—**B. T. F.**

**4524. Lantern Slides.**—In making lantern slides by reduction in camera from larger negatives, what is the best material to use as a focusing screen? Fine ground-glass under a compound magnifier becomes too coarse to get very fine definition, and I want something with as delicate a surface as possible. Also, is there any advantage in such work in using a medium "stop" in preference to the full aperture ( $f/8$ ) of the lens? Will some one experienced advise?—**A BEGINNER.**

**4525. Development of Bromide Paper.**—Is there any solution to stop, during development, parts coming out too quickly, whilst development of the remainder is still going on?—**NEWCASTLE.**

**4526. Mountant.**—Will some one kindly inform me what is the best mountant to stick the backs on to the opalines now so fashionable?—**KENDAL.**

## QUERIES UNANSWERED.

Feb. 13th.—Nos. 4499, 4500, 4501, 4503, 4504, 4506, 4507, 4508, 4509, 4510.

## ANSWERS.

**4478. Photographs of Different Styles of Window Dressing.**—Never heard of these, but tried once myself and found I got the reflection of the houses as well as the window.—**WILLEE.**

**4479. Watch Cameras.**—Very good of their kind, but no use for serious work.—**WILLEE.**

**4480. Eastman's Transparent Films.**—Two uncut films can be developed in a large dish. I have done four together out in two strips, but it was very fiddling work. Of course, the films must lie flat on the bottom of the tray.—**E. D.**

**4481. Carbutt's Plates.**—Stock pyro solution:  
Distilled water ... .. 10 oz.  
Sulphuric acid ... .. 3 drms.  
Sulphite of soda ... .. 2 oz.

Dissolve, test with blue litmus paper. If it does not turn red, add a few drops of acid till it does. Then add:

Pyro ... .. 1 oz.  
Distilled water, to make ... .. 16 "

Stock soda solution:  
Water ... .. 10 oz.  
Sulphite of soda ... .. 4 "  
Carbonate of soda ... .. 2 "

Dissolve and add:  
Water, to make ... .. 16 cz.

Bromide solution:  
Bromide of potassium ... .. 3 oz.  
Water ... .. 5 "

Developer: Dilute sufficient of B for the number of plates to be developed by adding 4 oz. of water to 1 oz. of stock B. To 3 oz. of dilute B, add  $1\frac{1}{2}$  to 2 drms. of stock A. The more pyro the denser the negative, and vice versa. Use bromide solution in cases of over-exposure.—**WILLEE.**

**4481. Carbutt's Plates.**—The makers advise the following:

(A). Dissolve 4 oz. sulphite soda in 10 oz. water, and then add sulphuric acid 1 drms., pyro 1 oz., and water to 16 oz.

(B). Carb. potas. 2 oz., carb. soda 2 oz., water 10 oz. Take 3 drms. of A and 2 drms. of B to 4 oz. water, with a few minims of a 10 per cent. brom. potass. solution if over-exposed.—**THE SMITH.**

**4482. Copying Drawings.**—The slow Ilford plate developed with hydroquinone will do very well. Use a rectilinear lens that will cover the plate well, and

with stop  $f/22$ , reducing from 12 in. to 6 in., try an exposure of  $2\frac{1}{2}$  minutes in a well lighted room.—**THE SMITH.**

**4483. Rough Paper.**—Fry's "Naturalistic" paper will answer your requirements.—**THE SMITH.**

**4483. Rough Paper.**—Write to Fry's for a sample of their new rough paper.—**WILLEE.**

**4484. Celluloid Films.**—Fry's and England's are both very good. They are both, however, very much slower than rapid plates. I over-exposed with a 100 stop, using a Lumiere plate, and under-exposed in the same light with 42, using a film. I have never obtained a satisfactory film negative with a shutter. Perhaps Cristallo might bring them out better.—**R. D.**

**4485. Fixing and Toning Bath.**—Will keep good for two or three months, but always add  $1\frac{1}{2}$  gr. of gold for each sheet of paper toned.—**WILLEE.**

**4485. Fixing and Toning Bath.**—Keep the gold in a separate solution and add as required.—**THE SMITH.**

**4488. Films.**—Eastman film and a French one are the only rollable films. The French film is very clear. It can be obtained at Marion's.—**E. D.**

**4488. Films.**—The new Eastman film is the thing. Nothing else to approach it at present.—**THE SMITH.**

**4488. Films.**—Write to Eastmans.—**WILLEE.**

**4491. Celerotype Prints, Loss of Tone in.**—Print much darker, wash the print in a bath of glycerine and water before toning. This cures the curling of the prints.—**WILLEE.**

**4492. Snap-Shot.**—You will want a very fast shutter, rapid plate, and a good light. You will succeed best by following the object with the camera as you pass, and keeping it in the centre of the field as the shutter is released. By so doing you will probably blur all the surroundings, but the principal object will be sharper than if the camera were held stationary.—**THE SMITH.**

**4492. Snap-Shot.**—I believe it is possible, but only by experienced hands used to the work. My own results have been terribly shaky.—**WILLEE.**

**4493. Platinotype.**—Your negatives are probably too thin and weak for platinotype. It requires a strong, dense, well-contrasted negative. Try hot-bath process.—**R. D.**

**4495. Hand-Camera.**—With a little contriving, Lancaster's Merveilleux can easily be fitted as you wish. The chief objection to a half-plate lens would be that the focus is too long, and consequently, if worked at anything like a large aperture, would be deficient in depth of focus. I would not recommend a longer focus than 5 in. for a quarter-plate hand-camera.—**THE SMITH.**

**4495. Hand-Camera.**—I have seen one made into a hand-camera, but looked clumsy. But why not buy a Griffiths or Talmer? You will find it cheaper.—**WILLEE.**

**4498. Toning Bath.**—You only add 1 gr. of gold for each sheet of paper used.—**WILLEE.**

**4502. Dry Plates.**—You cannot do better than Carbutt's.—**WILLEE.**

**4505.—Installments.**—Write to A. G. Taylor, Queen Victoria Street, City.—**WILLEE.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT.**

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**J. WEST.**—"Photography as a Business" is published by Percy Lund and Co., Bradford.

**WATTV.**—A very good and perfect camera; book form. Excellent slides are supplied with the camera you name.

**JOHN FRANKLIN.**—Shall be pleased to see some of your results. The plates you have selected will give you satisfaction.

**P. N. BREALEY.**—We have replied on post-card.

**SPIDER.**—No.  
**JOHN SAMUEL.**—Many thanks for the paragraph, which will, no doubt, be a wrinkle to many of our readers.

**E. F. BECHER.**—The suggestion shall have consideration, but we fear it would not turn out financially a success. We shall, however, be glad to hear from you as to what form the number should take.

**MRS. OLDSBY.**—You may certainly send in the photograph. You can now only compete for a first prize. We shall be greatly obliged if you will send us some prints for hospitals.

**GEO. F. DIETRICH (Germany).**—Thank you for the corrections.

**BOGIE MAN.**—(1) We should recommend No. 1. (2) We do not think this is patented, and you would, no doubt, obtain it from any bellows maker. The lens might fetch half-price. It certainly does not



give such good definition as a special lens for the purpose you want it. Always pleased to help you.

A. P. JENKINS.—We place as follows—3, 2, 4, 9, 10, 11, 8, 7, 6, 1.

R. GORDON.—Yes, the tone is all right.

MAURICE EGERTON.—(1) Certainly not more than fourteen days. (2) We should certainly advise screws in preference to nuts and pins.

C. E. F.—Prout's elastic glue acts well for the purpose.

UMLINA.—We can recommend either No. 1 or No. 3. The answer to your question as to No. 1 is—very good.

HYPO.—It enables the developer to flow over the plate more easily. Stock solution:

Borax	...	...	330 gr.
Acetate of soda	...	...	180 "
Bicarbonate of soda	...	...	90 "
Distilled water	...	...	20 oz.

For use, take 10 drms. of this, add 1 gr. of gold, and 10 oz. of distilled water, and mix the bath two hours before using.

PYRO.—The following is given in Wall's "Dictionary":

Pyro	...	...	480 gr.
Sulphite of soda	...	...	1,920 "
Sulphuric acid (pure)	...	...	60 mins.
Distilled water, to	...	...	10 oz.

Restraint:

Ammonia bromide	...	...	48 gr.
Distilled water, to	...	...	1 oz.

Accelerator:

Sodium carbonate ( $\text{Na}_2\text{CO}_3$ )	...	...	480 gr.
Distilled water, to	...	...	10 oz.

FEROY C. PALMER.—(1) Yes. (2) A, yes; B, certainly; C, yes.

E. SMITH.—Early in March. Thanks for letter.

LYNN.—Either would do for your purpose, but possibly No. 2 would be the better. That maker's work is to be relied on.

W. T. BARTON.—Films are certainly the less weighty, and the changing is very simple. With that proviso we should place your selections as follows—1 (No. 3), 5, 7, 6, 2, 4, 3.

J. CHAMBERLAIN.—Reporter medals will be ready in about a fortnight. Yes, we set up the papers if sent in good time, and forward proofs to be read from. Glad to see you cleared up the exhibition so satisfactorily.

ECLIPSE.—We will try and trace the paragraph, and write you.

ST. ANDREW.—Your complaint is one that should be addressed to the Secretary of the Photographic and Dealers' Association, 7, Southampton Row, W.C. We have sent on your letter. The firm is one of good standing.

W. G. FREETHY.—We do not see that there is the least injustice in the awards made. You are at liberty to inspect the prints sent to the competition if you so desire. When would you like to see them, and where shall they be sent?

VIGAM.—Will send a criticism by post. Please forgive the delay.

GREENWOOD P.M.—Many thanks. We will try and advise our correspondent as you suggest.

F. H. J. RUEL (St. John, N.B.).—(1) Certainly; No. 1, a splendid lens. (2) You will be certain, in dealing with the firm, to have a first-class instrument. (3) We shall be quite pleased to do so. (4) You cannot do better than procure a copy of the instructions issued by the Platinotype Company, 29, Southampton Row, W.C. Excellent results may be obtained by either process.

J. W. BOOTHAM.—If you make a selection we will advise you by number, but we make a rule not to name firms in this column. Many thanks for your letter.

J. THOMAS.—You will be quite safe in buying either camera; they are both well worth the money. The plates named can be used for either work, and will give good results.

ERNEST WINN.—The fact of your having been awarded a junior first does not disqualify you. If you got the bronze you could still enter for the silver. You can compete in any of the open competitions. Entry forms are sent for March, April, and May.

H. G. BRIERLEY.—We are anxious that collections should be made after exhibition of the AMATEUR PHOTOGRAPHER Competition prints or slides in aid of the restoration of the Daguerre tomb. We shall have more to say upon the subject later on.

H. C. R. HALEY (Madras).—We have your list, and will do the best with the prints sent. We are delighted to find amateur photographers so far away from "home" entering the AMATEUR PHOTOGRAPHER competitions.

A. C. EVANS (Aljarrh).—Your letter shall receive attention, and the publishers will forward special and other numbers.

R. E. NICKERMANN.—Letters sent to us, and intended for Mr. Wall, will be handed to him in due course.

FREDERICK PARSONS.—Many thanks for your long letter of advice, which we shall keep as showing what a lively interest is taken in our business by those whose personal acquaintance we have not yet had the pleasure of making. Kindly send us the name of the man you buy your papers from.

J. S. ATKINSON.—The vote of thanks from your committee is much appreciated.

H. J. L.—We are not able to say whether the lenses mentioned "are capable of really good work," but should imagine they are of the usual form of cheap R.R. lenses, many of which turn out capital work.

MR. H. BAILEY.—(1) The chances are decidedly in favour of the shorter focus lens possessing a rather flatter field, but the definition should be equal in both. (2) Theoretical considerations may prove the R.R. lens more rapid, but in practice there is not the slightest difference.

AMATEUR.—(1) If the focus of your whole-plate lens is 11 in., the focus of the front combination would be about 22 in., consequently you reduce the angle of view or amount of subject included on the plate by one-half; the front combination would probably cover 15 by 12 or larger. (2) It is advisable to use a landscape lens in preference to the front or back combination of a doublet. (3) For pure landscape work the single lens is the best. (4) The front or back combination of a W.A.R. will do for landscape work, but actually the diaphragms are not in the proper position; see answer 2. (5) Yes, there is a camera extension to be had from Shew's, Newman Street, Oxford Street. (6) Quite true, the firm has now become a Company, and we prefer their paper. (7) There is no difference.

W. H. BANKS.—We can hardly tell you where you can get such a series. You might write to Mr. Cowper Baryard, the Editor of "Knowledge," or Spooner's of the Strand, might supply some of the moon.

LINDUM.—Your answers were received and marks awarded. The examiners will disqualify you unless you keep to the limit of 250 words. The books recommended for the City Guilds are, some of them, old. We should say "Hardwick's "Photographic Chemistry," Meldola's "Chemistry of Photography," and Burton's "Optics." If you can read French, Fabre's "Traité Encyclopédique de Photographie," or, if German, Eder's "Ausführliches Handbuch der Photographie." No. 1 is, we presume, a copy of an engraving or woodcut; the results you have obtained are good. No. 2 excellent, though there is a little too much shadow in the left eye. Over-exposure is probably the cause of your smoky skies in lantern slides. We are always pleased to help you. Shall we return prints?

F. G. SHEFFIELD.—Your prints to hand; we will tone and return you in the course of the week.

BRUCE.—We reply by post.

SARDONYX.—You exposed your plates an inordinate time, consequently the whole plate was fogged. If, by an exposure of 50 secs. 2 ft. from burner, you obtained a good lantern slide, the exposure for the other plates is not difficult to determine. The lantern plate shows 5 on Warnerke's sensitometer; an ordinary plate showing 18 deg. W. will require  $\frac{1}{3}$  of the exposure. You should have therefore given  $1\frac{1}{2}$  sec. exposure to the ordinary plate at 2 ft. A rapid plate showing 22 deg. W. would require  $\frac{1}{10}$  of that for a lantern plate. A lantern plate can be used for camera work, but the exposure would be very long—45 times that required for an ordinary landscape plate.

YOUNGSTER.—(1) Soak the plates in hot water, then scrub well with a nail brush, wash well, and dry, then rub them over with a solution of yellow wax and resin in benzine or turpentine. (2) About  $\frac{1}{3}$  or 1 sec. would be about right to diffused daylight. (3) The 60-times plates.

W. T. PHILLIPS.—Send us up the money, and we will write you by post.

H. C. LEAKE.—We place as follows—B, D, E, A, C, but we should say obtain some descriptions of the new ones. Your prints are under-printed and over-toned. Try the gelatino-chloride paper you suggest for albumenised paper in preference. We prefer washing the prints well and using the separate baths. The unevenness of tone is generally due to imperfect washing. By all means try and get a camera second hand.

T. HALL.—(1) No. 3. (2) The ordinary require about seven times longer exposure than the rapid. (3) We should advise you to use the following, instead of ammonia:—Carbonate of potash, carbonate of soda, and ferrocyanide of potash, of each 1 oz. water 10 oz. Use quarter of an ounce of this to 1 oz. of solution P for a half-plate. (4) We should like to see the negatives before we make a guess at the cause. (5) Ten minutes should be the run for ordinary exposures; half an hour is too long.

J. S. COVENTRY.—No. 1 slide is under-exposed; No. 2 is better, but a little too dense. The peculiar yellow opacity in the shadows is due to the developer precipitating the silver in a dichroic condition, that is, yellow by reflected light, but purple by transmitted light. Your two slides show up well on the screen of a rich purple tone, which is often tried after, but not always obtained, except by the use of pyro. Shall we return slides?

## Quarterly Examinations in Photography.

### QUESTIONS.

16. Give the directions for sensitising albumenised paper.
17. A batch of prints refuse to tone. What are the probable causes of, and how would you set to work to find out and remedy this fault?
18. What is the best method of washing prints? (Any special make of washing apparatus must not be recommended, though the principle embodied in the construction of the same may be explained.)

(Latest Day for Answers—March 2nd.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
2. All answers must be preceded by the question, and should be written on one side of the paper only.
3. A *nom de plume* may be used, but in every case the full name and address must also be given.
4. Answers must not exceed 250 words, unless otherwise stated by the examiners.
5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete. Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter. All communications to be addressed:—  
"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny Stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the SELLER to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

N.B.—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," bound, complete from beginning; what offers cash?—Rector, Elm, Frome.

AMATEUR PHOTOGRAPHER, vols. viii., ix., x., "Photography," vol. i., unbound, all complete, 60 odd numbers both papers; what offers cash?—Arthur Hunter, 14, Montague Villas, Richmond, Surrey.

Bicycle.—Will sell (£12) or exchange Premier model A safety bicycle, perfect condition, balls everywhere, hardly used, on view at Hillman, Her-



bert, and Cooper's depot, Lisle Street, Leicester Square, costing, with accessories, £21, for half-plate set, hand or tripod camera, etc., double dark-slides, or film roller, up to same cost price.—State full particulars of offers to Clifford Fothergill, Maison Sartou, Biarritz, France.

**Burnisher.**—Burnisher, half-plate, with lamp, complete; 8s.—White, Stores, Ardington, Wantage, Berks.

**Cameras, etc.**—Instantograph, half-plate, new pattern, complete, four double slides (wood), view-finder, also Gem pneumatic shutter, in thorough order, with canvas case; price 84s. on approval; deposit system.—Bate, Milton, Gillingham.

Lancaster's Instantograph (cost £5), dishes, three dark-slides; no reasonable offer refused.—Pearson, Brooklands, Uppingham.

Shew's Eclipse 5 by 4 camera, three double backs, perfect condition; £4.—Dr. Wm. Brydon, Hawick, N.B.

Photo-micrographic camera, quarter-plate, 20 in. focus, on baseboard, with turntable for microscopes; bargain, 25s.—Burr, Westgate, Gloucester.

Enlarging camera, 12 by 15, and 10 in. condenser, mounted on mahogany base, with iron standards; £7. Can be seen at the offices of the AMATEUR PHOTOGRAPHER.—W. Wells, 14, Girdler's Road, West Kensington.

**Cameras, Lenses, etc.**—Lancaster's quarter Merit, with lens, slide, and stand, also splendid tone violin, bow, and case, all in grand condition; approval; deposit.—Thomas, 1, Grugos Terrace, Port Talbot.

Half-plate Lancaster's 1891 Instantograph camera, dark-slide, tripod, fitted with f/8 R.R. lens, new; bargain, 66s.—Cheltenham House, Stroud, Glos.

Half-plate Instantograph, three double backs, three fronts, tripod, leather case for tripod, case for camera, etc.; Abraham's Challenge R.R. and Newman's shutter, cost £8 8s.; will exchange with cash if necessary for two whole-plate lenses, R.R. and W.A., or will sell for £5 5s., nett cash.—R. H. Jones, 44, Packington Street, London, N.

Lancaster's half-plate Instantograph, single lens, four double backs, tripod, instantaneous shutter, view-finder, all complete in case; £3 10s.—J. U. Sutherland, 38, Sandhill, Newcastle-on-Tyne.

Instantograph, Lancaster's quarter-plate 1890 camera, lens, shutter, two dark-slides, tripod, very good condition; 30s.—Allen, Ashburton, South Hill Park, Bromley, Kent.

Lancaster's 1890 Instantograph half-plate camera, slide, lens, shutter, stand, and waterproof bag; what offers cash?—Herbert, 4, Ausdell Road, Peckham, S.E.

For sale, camera (by Ross), 7½ by 5, movable back, three double carriers, two lenses, sliding stand, cloth, shutter (Newman's), two dark boxes to hold two dozen plates, three printing frames, lamp, nine dozen dry plates, all new; price £15 15s. the lot; approval; deposit.—H. Noble, Temple Combe, Henley-on-Thames.

Quarter-plate mahogany box camera, dark-slide, with excellent lens, suit a beginner; what offers?—T. W. Birdsall, Honeywell, Barnsley.

Fallowfield's half-plate Special camera, two double slides, Ross' portable symmetrical and Redshaw's rapid rectilinear lenses, both 7 by 5, Phoenix shutter, focussing cloth, etc., in solid leather case, with tripod stand, good as new; £8; approval.—Wood, Station Road, Grantham.

Half-plate camera, five slides, Wray's lens, Ashford's stand, Thornton shutter, best case; cost £13; offers.—Howard, 16, Perryn Road, Acton.

Whole-plate camera (by Stereoscopic Co.), conical bellows, every movement, three double backs, Optimus 9 by 7 R.R. and W.A. lenses, tripod, focussing cloth, solid leather case, all equal new; cost £27 6s. 6d.; price £17; approval on deposit.—Bygrave, 16, Canterbury Road, Brixton, S.W.

Camera, half-plate Lancaster's Instantograph 1890, reversing back and swing ditto, all latest improvements, fitted rapid rectilinear lens, Waterhouse stops, moveable hood, double slide, carrier, stand,

developing dishes, printing framer, measures, ruby lamp, etc., etc., all in very finest order; approval; £4.—Cooper, 9, Sussex Terrace, Markfield Road, Page Green.

**Hand-Cameras, etc.**—Hand-camera, 5 by 4, Lange pattern, three double dark-slides; cost £10; for £4; good condition.—Brocklebank, Christ Church, Oxford.

Hand-camera (Abraham's), takes 18 quarter-plates, rectilinear lens, f/6, adjustable self-setting and capping shutter, focussing arrangement, two finders, in perfect order; lowest price £4.—B. J. Grover, East Lynn, Woodberry Down, N.

Ideal hand-camera, nearly new, cost £6 10s., splendid results; what offers?—Beverington, 2, Liverpool Buildings, Highbury.

Hand-camera, the American "Hawk Eye," 5 by 4, with three double backs, etc., complete; £3 10s.—Baird, 15, Lothian Street, Edinburgh.

Demon detective camera, etc., for 12 plates 3½ by 3½, only used six times; cost 18s.; cash 10s.—No. 113, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Lanterns, etc.**—Optimus enlarging lantern, 8 in. compound condensers, mahogany body, large Argand lamp, in perfect condition, fitted case to take chemicals, etc.; cost £13; price £8.—Moon, 3, Coleman Street, E.C.

A three-guinea Lancaster's enlarging lantern, in excellent condition, almost new, £2; or exchange for good Facile or Eclipse hand-camera. Or will exchange the above, together with Optimus magic lantern, adapted for oil and limelight, with lamp, jet, and accessories, in capital order, for good binocular lantern, with two safety jets and dissolver. Parting with lanterns for no fault whatever.—William A. Everington, Merton House, Dulwich Wood Park, Norwood.

**Lenses, etc.**—For sale, a pair of Harrison's Globe W.A. lenses, 3 in. focus, cost £4 16s., price £2 10s.; Levi's portrait lens, 15s.; Lerebours and Secretan's quarter-plate portrait lens, 15s.; quarter-plate portrait lens, 10s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

Rapid rectilinear lens, half-plate, condition as new, very fine definition, covers 7 by 5 plate well to edges; approval and trial; 30s.—Lawrence, Bootmaker, Enfield.

Lancaster's quarter-plate Instantograph complete; lens, shutter, double dark-slide, stand, three printing frames, all in splendid condition; price 30s.—H. Price, Stag Hotel, East Finchley.

6 by 5 Ross' rapid symmetrical doublet, covers up to 7½ by 5, with moderate size stop; cost £5 5s.; will sell for 75s.; new last summer.—Sutton, 21, Waterloo Place, Upper Leeson Street, Dublin.

Half-plate rectilinear lens and stops (by Laverne), good definition, 40s.; quarter-plate rectilinear lens and stops (by Wood, Cheapside), 30s.; 4½ in. condenser, never used, 15s., above in perfect condition; Shew's changing bag, good condition, 9s.; approval on deposit.—H. S. Houghton Place, Amphilil Square, London, N.W.

Optimus 8 by 6 rapid rectilinear lens, solid leather case, in excellent condition; price £2 10s.—Dorset Villa, Yeovil.

Wray's 5 by 4 rapid rectilinear, Iris diaphragm, works f/5-65, never used; 52s.; cost 65s.—E. W. Toulmin, 6, Marine Parade, Hastings.

Quarter R.R. lens, Waterhouse stops, 17s. 6d.; Decoudon's photometer, 5s. 6d., as new.—Jones, 31, Beaufort Street, Brynmawr.

**Magic Lantern.**—Lecturers' complete outfit, first-class binocular lantern, sheet, two 40 ft. cylinders, regulators, gauge, tubing, etc., in first-class order, new last year; cost nearly £30; price £16 10s.; a genuine bargain.—W. North 62, New Road, Aylesbury.

**Sets.**—1891 Underwood's quarter-plate Compactum set, new; bargain, 14s. 6d.—John Slade, Sla1 Road, Stroud, Glos.

**Shutter.**—Whole-plate Kershaw shutter, 2½ in., new, perfect condition; 15s.—Cooper, Chestergate, Stockport.

Shew's Eclipse instantaneous shutter, for whole-plate lens; cost 32s.; price 12s.—John Stabb, 139, Queen's Road, Baywater.

**Sundries.**—Saxhorn in F, with extra E flat crook, soprano cornet, clarinet in C, violin with case, rosewood zither, cost £2; also tricycle, splendid condition, drives exceptionally easy, suitable for lady or gentleman; what offers? or exchange.—Clarence Jones, 44, Shear Brow, Blackburn.

Burnisher, Ashford's tripod, retouching desk, Phantom pneumatic shutter, all whole-plate, Marion's 10 by 8 Academy, background seascapes, also lot of photographic sundries; list and prices sent; letters only.—Mrs. F., Teviot Villa, Upper Caterham, Surrey.

Two whole-plate and two half-plate spools Eastman's stripping films (24 exposures) to be sold cheap; no reasonable offer refused.—W. G. Brewis, Dartington.

Send for list of cameras, etc., to be sold cheap, to Roberts, Roar's Head, Mold.

Ward and Lock's "Universal Instructor," in three vols., bound in half calf, not soiled; will exchange for good half-plate camera, with lens, tripod, and other fittings.—No. 115, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Views.**—Peak of Tenerife, Great Caldera of Palma, views.—Soar, 1, Sussex Villas, Kensington, London, W.

## WANTED.

**Cameras, etc.**—Lancaster's half-plate 1886 Special camera and three double slides, without lens and not preferred.—J. B., 162, High Street, Camden Town, N.W.

Shew's Eclipse camera, half-plate.—Dr. William Brydon, Hawick, N.B.

Lancaster's half-plate camera, 1890 Special, with two dark-slides, also stand for same; no lens required.—E. P., 16, Granville Road, Lewisham, S.E.

**Dark-Slides.**—One or two dark-slides for half-plate 1890 Instantograph, cheap for cash.—Dixon, 11, Penton Place, Kennington Park Road, S.E.

**Hand-Cameras, etc.**—Facile hand-camera, in good condition and cheap.—Graham, Spring Hill, Bowdon, Manchester.

Kodak, No. 2 or 3.—Hummel, 2, Thomas Street, Newcastle-on-Tyne.

**Lenses.**—R.R. lens, 8½ by 6½, by Dallmeyer or Ross.—White, Naturalist, Salisbury.

**Sets.**—Complete quarter-plate Improved Lancaster's Instantograph outfit, in good condition, cheap for cash.—W. H. G., 47, Huskisson Street, Liverpool.

Half-plate set, Instantograph or similar pattern.—Send price and particulars to Photo, 24, Darwin Street, Birmingham.

**Shutter.**—Kershaw shutter, hood 1½ in., approval; also good ruby lamp, oil.—A. H. L., 120, High Street, Portsmouth.

**Sundries.**—To exchange a print occasionally with another amateur.—Paro, care of Mr. Filtress, Chemist, Crowboro' Cross.

Rates for solar enlargements (not bromide).—E. Owen, Friar's Stile Lodge, Richmond Hill, S.W.

## Lantern Slide Exchange.

**NOTE.**—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

R. C. Ewart, Bernard Street, Leith, has 40 comic slipping slides, which he would exchange for English lakes, coating scenes, or slides suitable for children's meetings.

**PHOTO** Business for sale (Midlands), returns £250, increasing rapidly, no opposition, splendid chance for beginner; would give instructions to amateur. Price, complete, £250.—Apply, No. 114, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, E.C.

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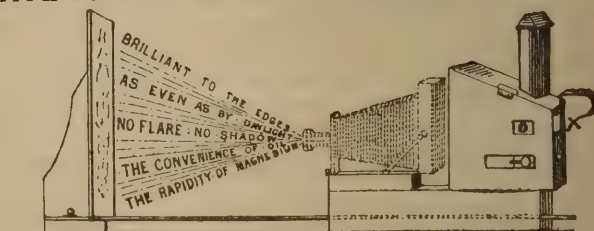
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FRIDAY, FEBRUARY 27, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

**OUR VIEWS.**—Monthly Lantern Slide Competitions, Portraiture and Figure Studies; the Awards—The Eastman Company, Large Profits and Enormous Turnover—Mr. Davison and Dr. Emerson—The Liverpool Photographic Exhibition—The Vienna Exhibition—How the Austrians Do their Work—Exhibition at Faversham—A Society for Epsom—The Seven Ages of Man Competition—Snow and Hoar Frost Competition—The Crystal Palace Exhibition and the Challenge Cup—The Federation of London and Suburban Societies—Brush and Pencil on Landscape Photographs—Second Triennial Photographic Exhibition at Gloucester—New Books, "Development" and "Art of Retouching"—Mr. Scholzig Reduces the Price of Sensitised Paper—Another New Hand-Camera.

**LEADER.**—Photography in Colours.

**LETTERS.**—Hydrogen from the House Main (Hargrave)—Rough Papers (Clark)—Photography in Colours (Lacy)—Liverpool Exhibition (Mayne)—Society for Epsom (MacMahon)—Emerson v. Davison (Davison)—Vienna Exhibition (Sma)—Federation of London Societies (Biden).

**ORIGINAL ARTICLES.**—Composition and Light and Shade, illustrated (Robinson)—Photo-micrography, illustrated (Pringle)—Chemistry for Photographers, illustrated (Bothamley).

**EXHIBITIONS.**—Prospective Arrangements, Liverpool.

**NOTES.**—Liverpool: Photography at Walton—Lecture on Ober Ammergan—Photographic Reproduction of All Colours—The Liverpool Society, New Members—The Exhibition. Paris: Polyglot Tickets—Coloured Pictures and Coloured Negatives.

**SOCIETIES' MEETINGS.**—Belfast—Birmingham—Blackburn—Brehin—Brixton and Clapham—Cornish—Colchester—Croydon—Devon and Cornwall—Dukinfield—Ealing—East Southsea—Enfield—Epping Forest—Formby—Glasgow—Glenalmond—Hereford—Holborn—Lantern Society—Leeds—Liverpool (Y.M.C.A.)—Loughborough—Louth—Morley—Newcastle-on-Tyne—North Kent—North London—North Middlesex—Nottingham—Paisley—Richmond—Selby—Staffordshire Potteries—Spenn Valley—Sydenham—Toynbee—West Kent—West Surrey—Wigan—Woolwich.

We note that in our second Monthly Lantern Slide Competition, "Portraiture and Figure Studies," only thirty-four competitors sent in slides. The following are the awards:—

*First Prize (Silver Medal).*

S. H. BARTON . . . . . London.

The slides are on Edwards' plates, developed with eikonogen. The titles are "Mr. S. W. Hersee as Corrigan," and a fancy portrait, "Bo-Peep." They are both admirable studies, and the technical work excellent.

*Second Prize (Bronze Medal).*

F. W. PLEWS . . . . . Leeds.

This competitor sends "The Old Stone-breaker" and "The Young Naturalists," both made by contact on Thomas' plates, developed with pyro and ammonia. A soft brown tone has been secured. The subjects are well arranged.

*Third Prize (Certificate).*

JOHN J. THORNTON . . . . . Southsea.

Two very good slides are sent by this competitor—"The Skipper's Daughter" and "An Industrious Fisherman." They are made by reduction on Fry's plates, developed with hydroquinone.

We would also call special attention to one slide contributed by Major A. Dowdall (Exeter), which is the most

perfect slide sent to this month's competition—"Playmates," a brilliantly-lighted picture from a hand-camera negative. Three children are swinging on a gate; the lighting is perfect, and the setting of the picture all that an artist could desire. Unfortunately, the other slide—"Dorcas"—sent by the Major is quite of third-class standard, so it was impossible to place his work. We draw special attention again to this inequality, and would point out that the two slides must be of equal value, as pictures and technically. In this month's competition the slides, taken all round, are of better quality, and out of thirty-four entries we have three sets prizes, one set highly commended, for one slide, eight sets in Class 1, fourteen sets in Class 2, and eight sets in Class 3. The complete list will be published in the next issue of the *Photographic Reporter*.

The shareholders of the Eastman Photographic Materials Company, Limited, should be highly satisfied with the work of the Directorate and management during the thirteen months that the Company has been at work. The growth of business done has been marvellous; the sales for the thirteen months ended December 31st, 1890, reached the sum of £50,387, and the net profit nearly £10,000. This enabled the Directors to recommend the payment of a dividend at the rate of 10 per cent. per annum on the preference shares and 5 per cent. on the ordinary stock of the Company, carrying forward a balance of £1,600. The ever-growing popularity of the transparent rollable film, the improvements made in the Kodak, and the enormous sale of bromide paper has necessitated manufacturing in this country, and we understand from Mr. W. H. Walker, the Company's courteous Managing-Director, that the first section of the extensive manufacturing premises now being built at Harrow will be in operation within two months from the present time. We have no doubt that we shall be privileged to inspect the works at Harrow, and shall, of course, give the readers of the *AMATEUR PHOTOGRAPHER* an article upon what we see and hear. We note that Mr. Walker said at the shareholders' meeting that if the Company could have only executed all the orders which poured in upon them, they could have paid a 20 per cent. dividend all round, a position to which he hoped to reach before long, when they had their factories at work.

It has been represented to us that Mr. Davison was entitled to reply to Dr. Emerson; we have, therefore, much pleasure in publishing the dignified letter sent us by Mr. Davison, and there the matter must end.



EVERYTHING promises a most successful exhibition at Liverpool. More rooms have been secured in the Walker Art Gallery than on the occasion of the last exhibition. An appeal is being made to the railway companies for reduced fares. The Exhibition will be opened on Friday, March 6th, with a *conversazione*. The Committee entertain the Judges and a select company of gentlemen interested in photography before the opening ceremony. The tickets for the opening night are being largely sought, and an enormous crowd may be expected.

We are pleased to be able to state that through the courtesy of the Exhibition Committee, practically the whole of the slides contributed to the last AMATEUR PHOTOGRAPHER Stereoscopic Slide Competition will be exhibited.

THE conditions under which the Vienna Exhibition has been promoted brings us several letters. A correspondent resident in Vienna says—"I thoroughly approve the position your valuable paper has taken up in this question. . . . I believe that if rules similar to those enforced at the Liverpool Exhibition had been issued, scarcely twenty exhibits would have been got together. Professional assistance is the rule here, not the exception, and it is the rule within the precincts of the Club. . . . I know members who do not even, and are not able to, develop their own plates. Others, again, turn out their own plates, but never do either retouching or printing. . . . Not one of these gentlemen would deny having received professional assistance, or feel the least ashamed of it."

This is interesting after the letter already published from the President of the Club. Perhaps Mr. Davison and Mr. Maskell will now recognise that the work sent from England, which has been produced *entirely* by the exhibitor, has to compete against the artistic productions of those who make their living by preparing amateurs' negatives, or prints from them. We do not consider this an elevation of photography. An artist who paints a picture, if he is an honest man, would never allow even a fellow-artist to paint out, paint in, or touch up the canvas upon which he puts his name. Why should the amateur photographer act in any way differently to the artist? We consider that if he allows another to print from his negative and exhibits the resulting photograph as his own work, it is tantamount to fraud, quite as much as for a man to purchase a picture, paint on it his own name, and exhibit it as his own work.

WE publish a letter from Herr C. Srna, the President of the Vienna Club of Amateur Photographers, in which he says it is now too late to alter the conditions. So far as the part we have taken in this matter, we are perfectly prepared to stand by every word that we have written. Instead of the conditions under which the Vienna Photographic Exhibition are held being looked upon as a model for us to follow, they are really an example to be avoided. It is no concern of ours how the Viennese conduct their exhibitions, or that the patrons and members of the Club of Amateur Photographers are contented to exhibit photographs as their work which they had no hand in producing; but when English amateurs are asked to compete who do produce their own photographs, it is time for us to show that even in so small a matter as photography the Austrian and the English are not exhibiting under equal conditions. We know that very prominent members of the Vienna Club exhibited, and were awarded prizes for photographs that practically owe their existence to professional photographers. Perhaps Herr Srna will tell us at his leisure how many members of the Club are able to produce from their own or any other negative, a platinotype print that would secure

a prize in one of the AMATEUR PHOTOGRAPHER Monthly Competitions.

THE Faversham Photographic Society are pushing ahead. They will hold their first annual exhibition from the 21st to the 24th of April inclusive. The exhibition will be devoted to the work of members.

In another column we publish a letter urging the formation of a photographic society at Epsom. Mr. P. M. Macmahon, of Upper Downs Road, will be pleased to have the support of any workers in photography living in the district.

WE would remind our readers that the last day for receiving entries for the "Seven Ages of Man" is Saturday, the 28th inst. We hope many are intending to compete.

THE next Monthly Competition, "Snow and Hoar Frost," should tempt a large number of competitors, owing to the very exceptional opportunities offered by the recent severe and wintry weather. Photographs must be received on or before the 2nd prox.

MR. S. G. B. WOLLASTON advises us that space at the forthcoming Crystal Palace Photographic Exhibition is being well applied for. He also asks us to state, in regard to rule 10, clause e, governing the competition for the challenge cup, that it means "the professional work *shall not exceed* one-fourth the number of the whole exhibits."

MORE combination! Mr. Lewis M. Biden, President of the Toynbee Camera Club, sends us a circular with regard to a meeting that he has called for Monday next, the 2nd of March, which will be held at six o'clock in the rooms of the Photographic Society of Great Britain, 50, Great Russell Street, by the courtesy of the Council. At this meeting, to which Secretaries of societies are specially invited, Mr. Biden will propose the discussion of the following matters:—

- (1) The association or federation of the London Societies.
- (2) The interchange of lectures, papers, lantern slides, etc.
- (3) As to obtaining the reduction of railway fares to amateur photographers on their outings.
- (4) Whether any proposal can be made to the P. S. G. B. for admission of the various societies as corporate members of the P. S. G. B.
- (5) How to assist in promoting the proposed Photographic Institute.
- (6) Generally to promote photographic knowledge and research.

We have the pleasure of Mr. Biden's acquaintance, and must congratulate him upon having filled a big bill. We hope that the Secretaries will support him. The questions on the agenda are all vital ones, and the discussion of them must do good. Mr. Biden is an experienced organiser, and we have no doubt that the meeting on Monday next will lead to action.

A CORRESPONDENT writes that he considers that the use of the brush and pencil on landscape photographs should not be discouraged *so long as the resulting work be classed by itself as a thing apart from pure photography*. We have long held this opinion, but must add one other proviso, that is, that the brush or pencil should be used by the person who exposed the negative.

THE second triennial photographic exhibition promoted by the Gloucestershire Photographic Society will be held



from April 20th to the 30th inclusive. We are asked to state that the date for closing entries has been fixed for March 13th. The judges will be Messrs. Valentine Blanchard, Ed. Brightman, and H. P. Robinson. The Secretary tells us that he anticipates a very successful exhibition, quite equalling, if not surpassing, the one held in 1888.



We make no apology for calling attention to a very useful little book just issued by our publishers, "Development," by Lyonel Clark, C.E. Amateur photographers will do well to purchase a copy of this book, and work in accordance with the rules and instructions clearly laid down. Another book for the more ambitious worker has been issued on the "Art of Retouching," written by J. Hubert. Those who are desirous of being able to retouch their own negatives will do well to study this book. They are both to be bought for one shilling each.



We are glad to notice that Mr. Scholzig is able to return to his old prices for sensitised paper. We hear good accounts of his new gelatino-chloride emulsion paper, which differs from others in the market as it is supplied in a white tint.



We shall next week give a description of a new hand-camera to carry 18 or 24 plates, which is one of the simplest we have ever seen, and cannot, we should say, possibly get out of order.



#### PHOTOGRAPHY IN COLOURS.

M. LIPPMANN'S note to the French Academy of Sciences at Paris, on Photography in Colours," is published in full in *Le Moniteur de la Photographie*, and we give a translation of the text of the same, with that of some notes by M. Edmund Becquerel, who, as our readers are well aware, has himself been an experimenter in this direction:—

"I proposed to obtain on a photographic plate the image of the spectrum in its natural colour and in such a way that this image should remain henceforth fixed, and be capable of being exposed to full daylight without alteration. I have succeeded in solving the problem by the aid of the sensitive salts, the developers, and the fixing agents now used in photography, by simply modifying the physical conditions of the experiment. The essential conditions for obtaining colours in photography are two—(1) the continuity of the sensitive film; (2) the presence of a reflecting surface in contact with and behind this film. I mean by continuity the absence of 'grain': it is necessary that the iodide or bromide of silver, etc., should be distributed on the interior of a sheet of albumen, of gelatine, or of some other transparent and inert substance in a uniform manner and without forming 'grain' which can be seen under a microscope; if there is 'grain' it ought to be of such a size as to be negligible in comparison with the wave length of light. The employment of the coarse emulsions of every-day use is, therefore, excluded. A continuous film is transparent, except, as a rule, for a faint blue opalescence. I have used as a support albumen, collodion, and gelatine; as sensitive salts, iodide and bromide of silver; all these combinations give good results. The plate, in a dry state, is placed in a frame into which one pours mercury; this mercury forms a reflecting surface in contact with the sensitive film. The exposure, the development, and the fixing are performed as if one wished to obtain a black negative of the spectrum; but the result is different: when the plate is finished and dried, the colours appear. The cliché obtained is negative when looked through; that is to say, each colour is represented by its complementary. When examined by reflected light it is positive, and the original colour is seen, which it is possible to obtain with great brilliancy. To obtain such a positive the image must be developed and sometimes intensified, so that the photograph shall be of a light colour, which is obtained, as is well known, by the use of acid solutions. The plate is fixed with hyposulphite of soda and is then carefully

washed. I have found that the colours are then unaffected by the most intense electric light. The theory of the experiment is very simple. The incident light which forms the image in the camera interferes with the light reflected from the mercury. Thus in the interior of the sensitive layer there is formed a system of interference bands, i.e., of bright maxima and dark minima. Only the maxima affect the plate, and after the process is terminated, the place of these maxima is marked by deposits of silver more or less reflecting. The sensitive layer is thus divided by these deposits into a series of films, each of which has a thickness equal to the interval which separated two successive maxima—that is to say, half a wave-length of the incident light. These thin films have, therefore, exactly the thickness necessary to reproduce by reflection the colour of the incident light. The colours visible on the plate are thus of the same nature as those of soap bubbles. But they are purer and more brilliant, at least when the photographic process has yielded a good reflecting deposit. This is due to the fact that there is formed in the thickness of the sensitive film a very large number of thin films superposed: there are about two hundred, for instance, if the layer is .20 millimetre (one-five-hundredth of an inch) in thickness. For the same reason the purity of the reflected colour is increased by an augmentation in the number of the reflected surfaces. These surfaces form, in fact, a kind of diffraction grating in depth, and for the same reason as in the theory of reflecting diffraction gratings, the purity of the colours increases with the number of elementary mirrors."

M. Edm. Becquerel thus comments on the above communication:—

"I wish to explain the difference which exists between the entirely physical procedure that M. Lippmann has explained for reproducing photographically the colours of light, and the photo-chemical process that I discovered in 1848 for obtaining the coloured images of the solar spectrum, as well as the images of objects with their proper colours. It is by the aid of the same chemical substance, the subchloride of silver, formed on the surface of a plate of silver, and of which I have indicated the preparation and modifications so curious under the different influences, notably under the action of heat, that I was able to attain this effect. One ought besides, at the time of the preparation of the sensitive substance, determine with exactitude, as I have done, the thickness of the film necessary for the production of these effects in best possible condition; this thickness may vary between the four-thousandth and the six-hundredth part of a millimetre. These images are absolutely unaltered in the dark, and I possess still the reproductions of the solar spectrum made more than forty years ago; also those images coloured by light which served as basis to Regnault for the preparation of the report which was presented to the Academy in 1849. They have not altered by the ulterior action of light, although the sensitive surface upon which they were obtained was not completely transformed, and is still able to be affected by the action of the different coloured rays. It was the same compound on which, still later, in 1865, M. Poitevin used to obtain on paper the coloured images which I produced on metallic plates. When one submitted the photographic images thus coloured to the reducing action of one of the solvents of chloride of silver, such as ammonia or hyposulphite of soda, the coloured shades disappeared, and there where the rays of light had exercised their action, there remained on the surface of the plate of silver a faint trace formed by a thin film of metallic silver, which, whilst it was still damp, showed feeble tints complementary to those which previously existed at the same places. These effects, which it is difficult to reckon *a priori*, show that perhaps the thickness of the films deposited play a part in the production of the phenomena of colour. This matter possesses the curious property, when properly prepared, of not only being sensitive to the action of the different coloured rays, from the red to the violet, in reproducing their peculiar tints, but still of receiving an impression which appears proportional to the intensity of the corresponding luminous impressions on the retina. I recollect, moreover, that this photo-chemically sensitive substance gives rise, at the moment of the chemical reaction which transforms them, to an electro-chemical current, the intensity of which and the electro-motive force ought to be proportional to the electro-chemical actinometry which I recognised. This current could perhaps be utilised for comparing very exactly the intensity of the different coloured active rays, for instance of the red and blue rays; when the



optical method based upon the impression exercised by the same luminous rays on the retina do not permit one to do this with very great exactitude.

"The two communications of which one can read the official text present clearly the state of the question, and they establish in a very complete manner the difference which exists between the old work of M. Edward Becquerel and the recent discovery of M. Lippmann.

"We have been permitted to see one of the proofs of M. Lippmann. We have noticed there the image which corresponds to the action of the spectrum on the plate treated as indicated by the learned Professor. The impression, or at least the sensation of the spectral colours, is very pure; certain of the proofs present at the same time a brightness tolerably vivid. We do not know at present anything so far as the practical application to which this discovery may give rise; it has proved at least the possibility of obtaining a photographic proof of the existence of interference. With regard to knowing whether experiments so delicate may serve as the basis for polychromatic reproduction, no one will be able to inform. We find ourselves here in the domain of action infinitely little. M. Lippmann himself has said that a film of one-twentieth of a millimetre thickness should be divided into films, and distinct layers to the number of 200 at least. The least irregularity in the thickness of the film in its continuity will be able to cause such disturbances of the true colours that they will be reversed. The method itself necessitates a reflective mirror in optical contrast with the sensitive film, the length of the exposure, etc., etc. The inconveniences which multiply in the midst of an operation so delicate force one to consider the communication of M. Lippmann as belonging to the domain of pure science and to wait so that the very long researches may be able to produce results very near a practical application."

## Letters to the Editor.

### HYDROGEN FROM THE HOUSE MAIN.

SIR,—On reading Mr. Pringle's article in your issue of the 13th I was much struck by his using hydrogen drawn from the house main for his mixed jet. My experience with the limelight has not been very large, but I have always been under the impression that the pressure of ordinary gas supply was not sufficient for that jet.

Mr. Pringle says farther on: "This arrangement of itself necessitates a specially small nipple." Is this on account of the pressure? Although a small nipple may have to be used, such a jet might give a better light than an ordinary blow-through, or even if not better, might give an equal light with a smaller consumption of oxygen.

Further information on this point would be of great interest to lanternists, especially those on this side of the Channel, as all compressed gas used here has to be imported. As regards the possibility of danger, means could be adopted to obviate it.—Yours faithfully,

J. H. HARGRAVE.

\* \* \* \*

### ROUGH PAPERS.

SIR,—If Colonel Noverre will turn to the *Photographic News* for 1873, p. 354-5, he will find full instructions given of M. de Constant's method of printing on plain paper, where he mentions amongst other papers "Whatman's rough drawing paper;" he also mentions a method of giving a coarse grain to smooth paper. I have never seen any of M. de Constant's productions, but I cannot doubt that he used the roughest paper obtainable, as the word rough is especially mentioned, and "not pressed," the medium quality of Whatman's paper.

Again, in a leading article in the same journal for the year 1875, p. 390-1, on "Drawing Paper for Photographic Portraiture," the phrase "rough drawing paper" is again used, and working directions for preparing the same are given.

You will, doubtless, have received many other communications referring to the early use of rough-surfaced papers in photography, but I pick these two out of my common-place book, as being particularly applicable to the present question.

I do not think that there can be a moment's doubt that rough drawing paper was used long before the 1887 Pall Mall Exhibition, but at the same time we must freely give Colonel

Noverre all credit for the revival of this most artistic method of reproducing our æsthetic impressions in monotype.—I am, etc.,

LYONEL CLARK.

\* \* \* \*

### PHOTOGRAPHY IN COLOURS.

SIR,—I am much surprised that no objection has been taken to colour photography (at least, I have seen none) on *à priori* grounds. It may be said that *à priori* judgments are worthless, but that is only the doctrine of a very small and narrow-minded school of physicists. All great philosophers—Kant, Hegel, Schopenhauer, Fichte, Spencer, Hamilton—maintain the validity of *à priori* judgments. Dialectics and ontology cannot be killed by mere materialism.

On *à priori* grounds colour-photography is a logical absurdity. Colour has no objective existence as colour. Its objective existence is as lengths and velocities in reflected rays of light, or as modes of motion. As colour it is purely subjective, and is the result of the impact of these reflected rays on certain nerves of the human organism. Nor is the result constant even on the human organism, because, as we all know, a large proportion of people are "colour blind," while it is tolerably certain that no two people see all the colours exactly alike. We have, furthermore, no proof that any brain but the human receives the sensation of colour as we know it, and the presumption, both on *à priori* grounds and on grounds of observation, is distinctly against it.

How absurd, then, to suppose that any inorganic (used in its philosophical sense) substance could receive identical impressions to those of some given human eye! Among the millions of the human race, whose eye is to be the standard? It is no answer to say that a conformation is set up in the substance correspondent to that of the colour rays, as is claimed by M. Lippmann's apologists. This is one of those plausible but vicious analogies that are scattered to the winds at the first glance of examination. What on earth is the parallelism between lengths of colour rays and thicknesses in layers of silver salt? It is mere words. There is nothing on which comparisons can be made; nothing of which the mind can take tangible grasp. It is merely making a physical model of hypothetical rays. But colour is not a physical substance; it is a subjective impression. You might as well make a physical model of heat or light. The absurdity becomes greater when we remember that even this model has no objective existence until its physical molecules have been re-arranged into chemical atoms by a process of decomposition set up with the aid of other inorganic substances!

Let there be no mistake; there is no real analogy between ordinary photography and photography in colours. The one is a mere physical record of the actinic value of reflected rays of light; the other is an attempt to reconstruct phenomena as subjectively manifested to the sensorial nerves of the human brain-stuff.

I am no scientist, and I have no doubt that some of your scientific bigwigs will be able to smash me (to their own satisfaction, at least) into very little bits. But I am a bit of a philosopher and logician, and I go straight to the common sense of the thing, and that assures me that the whole theory is a philosophical absurdity. I know enough of science, however, to see that Mrs. Crawford, from whom you have taken your account, knows less. What she calls the "inductive method" is the negation of induction. Induction is an empirical step-by-step inquiry, arguing from particulars to generals. This "discovery" of M. Lippmann was attained by jumping from a general to a particular.

Of course, I know that I shall be told that as the thing has been done, all my *à priori* arguments go for naught. Very good; when I see a human entity attain so far to a knowledge of things in themselves as to be able to reconstruct phenomena, and set them up on high where all the world can see, I will believe, but not until then. But I suspect that during my time man will remain a relative quantity, and not attain to the absolute.—Yours faithfully,

G. LACY.

\* \* \* \*

### ARISTOTYPE PAPER.

SIR,—As the decomposition indicated in my last letter actually takes place when using an alum bath after hypo, my objection can hardly be called theoretical. It is true that alum has been recommended for eliminating the last traces of hypo, and this it will do merely by destroying it, but it has long been recognised that it is far better to use plenty of water than any hypo eliminator. When manipulating large-sized chloride emulsion prints I



have found the following method of procedure not only convenient but capable of conferring all the advantages which Mr. Greenwood Pim desires, and at an earlier stage of the process, which is an advantage. It is applicable also to prints which are to be treated in the separate or combined toning and fixing baths; the toning is more even, and more under control, and there is less chance of accidental damage or curling of the support in the baths. The prints are placed face downwards on a dish of clean water, then bodily immersed as soon as the edges curl up; this water is changed as quickly as possible, and the process repeated till the water shows hardly any cloudiness; the prints are then immersed for five minutes in the following solution:—

Chrome alum .. .. . 1 part.  
Water .. .. . 100 parts

When dissolved, add—

Ammonia '880, drop by drop,

till, on shaking or stirring, a permanent precipitate appears; the solution is then filtered and is ready for use. The prints are well washed, and then toned in any desired way. It is true this entails a little more expenditure of time and water, but the results are excellent.—Yours truly,  
E. J. WALL.

\* \* \* \*

#### LIVERPOOL EXHIBITION.

SIR,—The following was addressed to the railway companies running out of Liverpool.

I would be glad if local photographic societies would aid our efforts to obtain greater railway facilities than we at present receive.—Yours truly,  
THOS. S. MAYNE.

Liverpool, 24th February, 1891.

#### INTERNATIONAL PHOTOGRAPHIC EXHIBITION, 1891.

Dear Sir,—This important function (triennial) takes place this year, March 6th till April 4th. It will, without doubt, be on the largest scale of any similar exhibition ever held in the kingdom. The Liverpool Corporation have granted the use of the greater portion of the Walker Art Gallery. We anticipate visitors to the extent of at least 50,000.

Probably the interest in the Liverpool Exhibition is everywhere the feature of importance in photographic circles over the country.

We now only want the help of the railway companies to double our number of visitors. The growing popularity of photography with the rising generation amongst all classes of our community, from the highest personages to the middle class and enlightened artisans, is not recognised to the extent it deserves by railway companies. Like cycling, it is only in its infancy; photography and cycling are the landmarks of the nineteenth century as elevating pastimes.

What I now beg you to grant is return tickets at single fare (day tickets), during the currency of the Exhibition, from all stations within thirty miles of Liverpool, to holders of our season tickets, or purchasers of single admissions, which tickets I will provide you with (the shilling admission tickets). On hearing from you I will circularise all the local and county photographic associations within this radius.

I have written this letter to your brother railway superintendents of the three chief railways terminating in Liverpool.

The favour of an early answer is requested.

THOS. S. MAYNE (Hon. Sec.)

\* \* \* \*

#### SOCIETY FOR EPSOM.

SIR,—It is proposed to organise a photographic society for Epsom and the district. Among those living in the neighbourhood there may be many who would wish to join it if the matter were brought to their notice.

I shall be glad if any one who is interested in photography and wishes to join the society will send his name to me.—Yours truly,  
P. M. MACMAHON.

Upper Downs Road, Epsom, 23rd February, 1891.

\* \* \* \*

#### EMERSON v. DAVISON.

SIR,—I do not think any detailed reply is needed to Dr. Emerson's personal attack on me published in your last issue. I hear but one opinion on all sides. The letter carries its own confutation on the face of it, and I decline to follow in the line of violent and unscrupulous personalities which it seems natural to

Dr. Emerson to adopt. If he has any serious inquiries to put, any arguments to maintain, or, indeed, any "expostulations" to make, and can do so in a fairly dignified manner, I shall be prepared to answer, confute, and explain. It will certainly not be necessary for me to descend to intemperate language nor to grub amongst his private letters to exhibit publicly what a delightfully pleasant gentleman Dr. Emerson is! Your readers have the picture direct from himself.—Yours faithfully,  
GEORGE DAVISON.

February 21st, 1891.

\* \* \* \*

#### VIENNA EXHIBITION.

SIR,—We were just going to answer your editorial in your former number when there reached us the new one in which Mr. Alfred Maskell and Mr. George Davison have taken up our cause so warmly and exhaustively that we have nothing more to add.

For the rest, the Club, at its general meeting on the 14th inst., resolved: "That as the time for non-Continental entries has passed, nay, as some pictures have already been received, it is absolutely impossible to alter the wording of our original circular of invitation."—We are, Sir, yours truly,

Vienna, Feb. 21st, 1891.

CH. SRNA (President).

\* \* \* \*

#### THE FEDERATION OF LONDON SOCIETIES.

SIR,—I am sending a circular to all photographic societies in or near London, according to the most recent list in my possession. As, however, some societies may have been overlooked, or owing to changes may not receive the circular till too late, will you allow me to say through your columns that, where a society cannot be officially represented, I trust the Secretary, and a member of the committee will attend in a private capacity.

Also I shall be glad to hear from the Secretary of any country society approving of the proposed association.—Yours truly,

LEWIS M. BIDEN.

11, Leadenhall Street, London, E.C.

February 20th, 1891.

(NOTE:—We refer to the subject matter of the letter in "Our Views."—ED: AM: PHOT:)



## Reviews.

*Geschichte der Photographie.* By C. Schiendl. Published by A. Hartleben, Maximilianstrasse 8, Vienna I. Price 8s.

One would naturally suppose that in the face of the publication of the excellent and complete "History of Photo-chemistry and Photography," by Dr. Eder, which has just been published, there would be no room for another "History of Photography;" but Herr Schiendl has given us a work which cannot fail to make its mark in photographic literature. The early history is briefly but thoroughly touched upon, the author reserving his powers for a most complete and exhaustive treatment of the advances made in the later discoveries; he gives us a summary of all that is known of Niepotype, daguerreotype, photography on paper, collodion processes, the early photo-mechanical processes, emulsion processes, and the more modern processes of photogravure, photo-zincography, etc. We then come to what is perhaps the most valuable portion of the work before us, and that is a summary of the scientific and theoretical investigations into the various photographic processes and the application of photography to scientific purposes. We thus find the whole of our knowledge of the latent or invisible photographic image summarised, and the opinions of authorities on this and similar subjects are given as far as possible in full. The possessor of such a work as Herr Schiendl has here given us will be saved a great deal of trouble in referring to the past history of photographic science and art. The information is brought fully up to date, and is very comprehensive, the closing chapters of the book being devoted to photogrammetrie or surveying by photography, photography in natural colours, artistic photography, and the new aniline dye process. The work is embellished with a frontispiece, containing the portraits of Niepce, Niepce de St. Victor, Daguerre, Mungo Ponton, Fox Talbot, Gaudin, Petzval, Albert, Poitevin, Davanne, Carey Lea, Abney, and H. P. Robinson, and also by a reproduction of the first photograph published by J. Nicéphore Niepce in 1824, and made by contact printing from an engraving on a sheet of zinc coated with sensitive bitumen.



**Photography and Lace.**—A Nottingham lace firm employs a photographer to photograph natural groups of ferns and plants to serve as suggestions for lace patterns. The idea is a happy one.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER V.

*Fig. 8.* Rubens in his landscape has carried the lines of the clouds, trees, and ground all in the same direction; and, from his placing the sun near the point of sight, even his shadows take the same course. When the most prominent or strong dark of the foreground is detached from the side of the picture, it has not only a less formal appearance, but acquires a force from its being cut out on both sides by light; as we shall find when we come to treat of Chiaroscuro. The lights also acquire a force and brilliancy from their being surrounded with dark, and the extent of the distance and continuity of the line are not altogether interrupted.

*Fig. 9.* In this subject, "Huntsman going out in the Morning," we have the principal group of a complete form in itself, yet forming a part of a whole, in consequence of its being carried round by the two dogs in the foreground, and connected by the principal dog in the other group turning round to the noise. As it is a doubt in the minds of some artists, how far it is agreeable to the rules of composition to admit a figure complete in itself as a portion of a group, I shall only observe here, that, as far as form is concerned, their objection cannot apply; and, as to individual parts, we see not only heads and hands complete as to form and light and shade, but we find that even an eye is capable of possessing all the characteristic beauties of the art. In fact, this application of it in the abstract, as well as in the aggregate, pervades everything.

An object must not only appear to possess those properties adapted by nature for its purpose and protection, but also those qualities which have been found by the experience of the best masters productive of beauty; this renders



FIG. 9.—P. DE LAER.

it a source of gratification; and it is then said to be true to nature and art. For example, if we examine an eye turned from the light, we perceive a breadth of chiaroscuro; the white, or cornea, producing a mass of light, the iris and

pupil a mass of shade. We find each of these focussed, and a small portion of the strong dark and strong light brought in contact; and the light passing through the iris gives it its transparency, and serves instead of reflected light to clear up the shadow; the watery fluid, in the bottom of the eye and on the under eyelid, gives us that portion of minute finish necessary in all works of art, to which even the protecting hairs contribute. We have here a picture complete in itself; but if we carry our examination to the surrounding lines in the orbit, we perceive a har-



FIG. 8.—RUBENS.

monious communication and extension of its form, lights, and darks, by which its harshness is softened and diffused, and it becomes a part of the composition of the whole countenance.

*Fig. 10.* I have given a gradual advancement of the most prominent and dark part of a composition, until, in this example, we have the strongest point brought into the centre. In the original, "The Embarkation of the Prince of Orange," the two principal figures are dressed in strong red, and strong black, and are the most cutting part of the group; and, from their being brought into the centre and against the most retiring part, and surrounded by light, Cuyt has rendered them of the greatest importance, though occupying only a very small portion of the picture.

In fig. 9 we have a more complicated example of composition showing the connection that should exist between the parts of a picture so that one harmonious whole should be produced. Unity is one of the essential constituents of a successful picture. No two episodes should appear unconnected with each other. In photography it is too often the practice to scatter figures unsuitably to the scene, over the foreground of a landscape without any reference to each other, or the propriety of their being there at all. This is, of course, worse than omitting them, but, with few exceptions, a landscape without a figure does not make so agreeable or interesting a picture as one in which they appear, when they belong to the scene and are naturally placed. So much, however, is the difficulty of using them felt, that even experienced photographers, instead of thoroughly studying the subject, have weakly tried to cut the Gordian knot by arguing that landscapes are much better without them. It is always easy for the weak and indolent to find excuses for, and to be easily pleased with, inferior work when it is their own. This weakness is increasing and requires a strong answer; I give it in the eloquent words of Mr.



Ruskin:—"All true landscape, whether simple or exalted, depends primarily for its interest on connection with humanity, or with spiritual powers. Banish your heroes and nymphs from the classical landscape—its laurel shades will move you no more. Show that the dark clefts of the most romantic mountain are uninhabited and untraversed; it will cease to be romantic. Fields without shepherds and without fairies will have no gaiety in their green, nor will the noblest masses of ground or colours of clouds arrest or raise your thoughts, if the earth has no life to sustain and the heaven none to refresh. It may perhaps be thought that, since from scenes in which the figure was principal and landscape symbolical and subordinate (as in the art of Egypt), the process of ages has led us to scenes in which landscape was principal and the figure subordinate—a continuance in the same current of feeling might bring forth at last an art from which humanity and its interests should wholly vanish, leaving us to the passionless admiration of herbage and stone. But this will not and cannot be. . . . Where humanity is not and was not, the best natural beauty is more than vain. It is even terrible; not as the dress cast aside from the body, but as an embroidered shroud hiding a skeleton. . . . Therefore, it is that all the power of nature depends on subjection to the human soul. Man is the



FIG. 10.—CUYP.

sun of the world; more than the real sun. The force of his wonderful heart is the only light and heat worth gauge or measure. Where he is, are the tropics; where he is not, the ice world."

(To be continued.)

## Photo-Micrography.—V.

BY ANDREW PRINGLE.

### USE OF THE BULL'S-EYE, CONDENSER, OBJECTIVE, CORRECTION COLLAR, OCULAR, ETC.

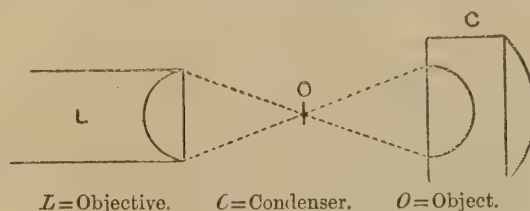
WE now come to the first steps actually to be taken when we propose to do some work. The first thing is to get all the centering accurate, and this is the way to do it. I suppose the work to be done is of a moderately easy kind, but not the very easiest. Light the lamp, or the lime-light, or the electric lamp. If an oil lamp, turn the edge of the flame towards the substage. Have a condenser in the substage (the front element, or "hemisphere," of the condenser may have to be removed). Have an objective (say 1 inch) in its place, close the iris of the condenser as far as it will go, or put a pinhole stop in or on the condenser. Get light to shine through the condenser somehow, no matter how, and rack the tube up and down, and the condenser up and down if need be, till an image of the iris is seen by looking

down the tube with a low-power ocular in the usual way. When the iris image is seen, centre it by the centering screws of the substage. Open the iris a little, rack the tube till an image of the flame is seen somewhere on the field. The lamp is to be moved in all directions till the flame image lies straight up and down the centre of the field. I presume that the camera, microscope, and light have already been centred as directed in Chap. II. (The centering described in the present chapter should be done frequently, certainly every time after the light has been moved.) We have now a streak of light straight down the middle of the circle forming our "field." Next place the bull's-eye (plane side towards the light) so that the light is exactly in the focus of the bull's-eye to give parallel rays on the other side, and place the bull's-eye so that a bundle of parallel rays falls directly on the back of the substage condenser. (For the method of arranging focus and centering of bull's-eye see last chapter.) If now we look down the microscope we shall find a powerful and even light all over the field; with the lime-light, if the condenser is not nearly closed, it will be dangerous for the eyes.

I must now explain a certain matter which is easy to understand if the reader will try things for himself, as directed above. If the condenser have a short focal length so much the smaller will be the image of the flame (without the bull's-eye) on the field. If the objective be of low power, so much the less will that image be magnified on the retina and on the sensitive plate. But if the condenser have a long equivalent focus, or the objective a great magnifying power, and, still more, if both of these conditions obtain, we may not have a narrow streak of light down our field, but one so broad as to cover our field. As a rule, however, we have with low and medium powers only the streak, and it is most awkward and unsightly to work with. With high-power objectives the streak is so magnified as to cover the whole field evenly, and in such a case the bull's-eye is not necessary. I used, in cases like this last mentioned, to omit the bull's-eye, and

to advise its omission, but now I may say I always use a double bull's-eye of the Herschel type. I now always get an evenly-lighted field—which I sometimes missed when using no bull's-eye—and I find I can do quite as good work, even to the flagella of the minutest organisms, as *B. Termo*, with the bull's-eye as without it.

For the best rendering of an object, visually or photographically, the object, or the critical plane of it, must be in the conjugate foci of objective and condenser. (Fig. 4.) The condenser "must be in focus" on the object, so must the objective. If we put an object on the stage, and focus



L=Objective. C=Condenser. O=Object.

FIG. 4.

it with our objective, we can easily focus the condenser also if we have no bull's-eye; all we have to do is to rack the condenser till we get the flame image sharply defined across the object, as seen through the objective, and be it noted this is a grand—some say the only true—image. (Mr. Nelson aptly describes the

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



microscopic image as an image of the radiant with the object stopping certain of the rays from the radiant.) But when we interpose a bull's-eye, the bull's-eye practically becomes the radiant, the focus of the condenser is altered (parallel in place of divergent rays falling on it), and we cannot focus the new radiant unless we put something on its surface, or in it, by which we can see to adjust the focus. An iris, or a small aperture on or in the bull's-eye, will enable us to focus it, and so I put on the bull's-eye a cap, with a small aperture, and now I can focus any condenser for the bull's-eye as easily as for the naked flame. A piece of paper stuck *pro tem.* to the front of the bull's-eye would answer, but, of course, the paper would have to be removed before work really began.

Here then are the steps to be taken, in order: Centre the condenser; centre the radiant; focus the objective on the object; focus the condenser on the object by flame, or by stop in bull's-eye. The bull's eye, if used, to be focussed and centered as described.

If the field is now not wholly lighted, the condenser is of too short focus for our objective. Racking down the condenser is often a cure for this state of matters, but it is a bad cure. It is better to use a condenser of longer focus, which may often be obtained by removing the front element of the condenser, which, of course, will then require to be refocussed.

Now we want to know how much of our objective is being utilised. Remove the ocular, and look down the tube at the back combination of the objective. The area we see brightly lighted is the area utilised. Nearly all the lenses I have work best when they are about two-thirds full of light, as observed in this way. Very few lenses will stand being fully lighted, but if we cut off too much light by means of the iris in the condenser (that is the way to do it) we lose aperture, and consequently the good qualities of our glasses. But with very thin, or very pale, or very pellucid objects, we are forced to cut down aperture, otherwise great *photographic* difficulties will confront us. Up to two-thirds of my objective I always use as much aperture as my object will permit, and, of course, with test objects I often have to go beyond the two-thirds.

Objectives of medium and high powers have usually—ought always to have—“correction collars,” which are used to alter the position of the elements with relation to each other, in order to adapt the entire objective for different thicknesses of “cover glasses,” and for different positions of the object with relation to the cover glass. With Zeiss' immersion apochromatics this accommodation is gained by altering the distance between ocular and objective (by means of the draw tube, which for this reason, should have a rack motion). Now these “collars” and “tube lengths” puzzled me greatly for months; it is easy to see the effect, but I found it vastly difficult to regulate it. My advice is, place the collar at about its medium point, and work slowly around that point on each side of it till the best image is obtained; the same with tube length; nothing but practice and eye education will ever teach the proper use of these most important “corrections.” For example, take one of the hairs in the intertubular spaces in the blowfly's proboscis, examine with a  $\frac{1}{2}$  or  $\frac{1}{4}$  in. glass, adjust the tube or the collar till the hair selected shows as long and as sharp as it can be made to show; that is the “correction” for that hair—more I cannot say.

We next pass to the use or non-use of the ocular. My experience is that the apochromatic glasses of Zeiss will not work well without an ocular, but all other lenses I have tried project good images without an ocular, provided, of course, they are properly corrected for photography. Sometimes, I am informed, an ordinary Huyghens ocular projects

an image suitable for photography, but I always use a projection ocular, if any. I have found many ordinary achromatic objectives to work well with a projection ocular, for instance, Mr. Swift's cheap one-twelfth, also certain glasses by Reichert, Seibert, and others. If no ocular is to be used nothing remains after focussing, except to turn the microscope to the central position, pull forward the light-excluding hood of the camera, project and focus the image on the screen, and make the exposure. But if a Zeiss projection ocular is to be used, the procedure is not quite so simple. Project the image on the ground-glass where a round black “mask” will be seen surrounding the lighted field. This “mask” is the image of the diaphragm in the ocular, and the edge must be focussed by moving the graduated collar which will be found on the projection ocular. This requires focussing for every different length of camera-stretch and tube-length. Having focussed this, I put into the back of the camera, close to the sensitive plate, a sheet of metal having in it an aperture just the size of the picture I require, in nearly all cases a circle of three inches diameter.

Arrange the picture on the ground-glass, then substitute a sheet of plate-glass with a few diamond lines on its front, focus with a Ramsden or other suitable focusser, and all is ready for the next, somewhat critical, operation—exposure.

(To be continued.)

## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 112.)

THE solubility of gases in water and other liquids depends upon (1) the nature of the gas and of the liquid, (2) the temperature, and (3) the pressure under which solution takes place.

In the case of water, hydrogen, oxygen, and nitrogen are very slightly soluble; sulphur dioxide and hydrogen sulphide are moderately soluble; hydrochloric acid and ammonia are very soluble.

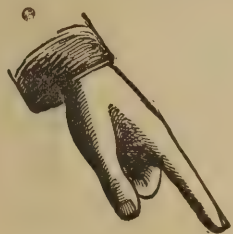
The effect of temperature is precisely the opposite to that which it exerts in the case of solids; as the temperature rises, the solubility of gases decreases. The following table shows the weight in grammes of hydrochloric acid dissolved by 1 gram. of water at different temperatures:—

0°	0.825	32°	0.665
8°	0.783	48°	0.603
16°	0.742	60°	0.561

Pressure increases the solubility, the weight of gas dissolved being proportional to the pressure. Ordinary aerated waters contain carbon dioxide which they have dissolved under pressure, and when the pressure is released by the opening of the vessel, the excess of gas escapes, causing the well-known effervescence.

The solubility of liquids in liquids presents more complex phenomena. When one liquid will take up another in any proportion, and form a homogeneous mixture, as in the case of water and alcohol or water and glycerol, the two liquids are said to be *miscible*. When one liquid will not take up more than a certain proportion of another, the second liquid is said to have a limited solubility in the first. If small quantities of ether, for example, are shaken up with water, the ether completely dissolves, but if the two liquids are agitated together in about equal proportions, the mixture on standing quickly separates into two distinct layers, the upper being ether with about 3 per cent. of water, whilst the lower is water with about 10 per cent. of ether. The





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former is an ethereal solution of water; the latter is an aqueous solution of ether. Very little is known of the laws which govern the solution of one liquid in another. Some liquids, such as oil and water, are only soluble in one another to an infinitesimal extent.

*Hydrogen peroxide* or hydrogen dioxide,  $H_2O_2$ , is obtained by the action of dilute acids, preferably sulphuric acid, on barium peroxide  $BaO_2$ , thus  $BaO_2 + H_2SO_4 \text{ dil.} = BaSO_4 + H_2O_2$ . Barium sulphate is precipitated, and the hydrogen peroxide remains in solution. The aqueous solution can be concentrated by evaporation at a low temperature until it is a thick oily liquid, but cannot be obtained free from water, because beyond a certain concentration the hydrogen peroxide decomposes into water and oxygen. If moderately strong solutions are heated, the same decomposition takes place, and becomes explosively violent if the temperature approaches  $100^\circ C$ . At the ordinary temperature the change takes place spontaneously, but can be very greatly retarded by mixing the solution of hydrogen peroxide with pure ether. A great tendency to part with the second atom of oxygen is, in fact, the characteristic property of hydrogen peroxide, and makes it a powerful oxidising agent. Strong solutions are highly caustic, and moderately strong solutions have valuable bleaching properties.

EXPERIMENT 96.—To a solution of any lead salt add a small quantity of sodium hydroxide (caustic soda) solution, and then some hydrogen peroxide solution; the white precipitate of lead hydroxide  $Pb(OH)_2$ , will become brown owing to its oxidation to lead peroxide  $PbO_2$ .

EXPERIMENT 97.—Make a similar experiment with a solution of a manganese salt; the white manganous hydroxide is oxidised to dark-brown hydrated manganese dioxide  $MnO_2$ .

EXPERIMENT 98.—To a mixture of starch paste and a small quantity of potassium iodide solution, add a few drops of hydrogen peroxide solution; the iodine is liberated from the potassium iodide and combines with the starch to form a dark-blue compound.

In all these cases the hydrogen peroxide acts as an oxidising agent, giving up half its oxygen to the other substance, and being itself reduced to water  $H_2O_2 = O + H_2O$ . There are certain cases, however, in which the other substance is also reduced, part of the oxygen from both bodies escaping in the free state.

EXPERIMENT 99.—In a test-tube, place a small quantity of solid potassium permanganate,  $KMnO_4$ , and to it add some hydrogen peroxide solution; effervescence takes place, owing to the liberation of oxygen, which can be recognised by its power of rekindling a glowing splint of wood. This oxygen comes partly from the hydrogen peroxide and partly from the permanganate, both compounds being reduced.

If hydrogen peroxide is added to silver oxide, the latter is reduced to metallic silver, and the former is reduced to water, the oxygen escaping as gas  $Ag_2O + H_2O_2 = Ag_2 + H_2O + O_2$ . These reactions show that there is an attraction of atoms of oxygen for atoms of oxygen, sufficient to cause the decomposition of compounds in which oxygen is very loosely combined with the other constituents.

EXPERIMENT 100.—To a dilute solution of hydrogen peroxide add some ether and then *two or three drops* of a solution of potassium dichromate previously acidulated with sulphuric acid, and agitate: a deep-blue compound is formed, dissolves in the ether, and rises to the surface when the liquid is allowed to stand. This is a characteristic and delicate test for hydrogen peroxide.

Hydrogen peroxide is formed during the partial oxidation of turpentine and other essential oils, which results from their exposure to air, and it is probably to this fact that the disinfecting power of these oils is due, since hydrogen peroxide rapidly attacks many forms of organic matter.

#### NITROGEN COMPOUNDS.

*Nitrogen and hydrogen* form three compounds, but only one of them need be considered in detail. This is *ammonia*  $NH_3$ , a gas which is formed from the nitrogen and hydrogen in coal during the manufacture of coal-gas, and which is absorbed in water, and yields the "ammoniacal liquor" of the gas works. From this solution the various compounds of ammonia are prepared.

*Ammonia* itself is most conveniently obtained by heating one of its compounds with some non-volatile base.

EXPERIMENT 101.—Mix a small quantity of ammonium chloride (or bromide) in a test tube with some caustic soda solution, and heat gently. A gas is evolved which has a peculiar pungent smell, turns red litmus paper blue, and forms dense white fumes when a glass rod dipped in strong hydrochloric acid is brought near the mouth of the tube. The white fumes are ammonium chloride  $NH_4Cl$ , formed by combination of hydrochloric acid with ammonia. The action of the caustic soda is represented by the equation  $NH_4Cl + NaOH = NH_3 + NaCl + H_2O$ .

EXPERIMENT 102.—Mix some ammonium chloride with powdered quick lime, and heat the mixture. Ammonia is evolved in this case also.  $CaO + 2NH_4Cl = 2NH_3 + H_2O + CaCl_2$ .

The well-known "ammonia liquor," also called "spirits of hartshorn," is a solution of ammonia in water. It slowly loses ammonia at the ordinary temperature, and rapidly when heated.

EXPERIMENT 103.—Place 200 c.c. of strong ammonia solution in a flask fitted with a cork, and a straight delivery tube about 20 cm. long. Invert a *dry* bottle over the delivery tube so that the end of the latter is near the bottom of the bottle (fig. 26), and gently heat the flask; ammonia is evolved, and being little more than half as heavy as air, collects in the bottle, and gradually expels the air. After a short time a piece of red litmus paper held just outside the mouth of the bottle will turn blue, showing that the bottle is filled with ammonia. Lift it slowly from the delivery tube, place a piece of card or stiff paper over the mouth, and, keeping it mouth downwards, bring it near a basin of water; remove the card, and put the mouth of the bottle into the water. The water will at once rush up into the bottle, owing to the rapid absorption of the ammonia.

EXPERIMENT 104.—Fill another dry bottle with ammonia in the same way, and bring a lighted taper to the mouth of the bottle and pass it up into the bottle. Observe that the taper goes out, but that there is a flicker of greenish-yellow flame at the mouth of the bottle. Ammonia is not a supporter of combustion, and when mixed with air is but slightly combustible. When mixed with oxygen it will burn, and with certain proportions will explode.

Ammonia solution has the characteristic smell and strongly alkaline reaction of the gas. It loses gas when exposed to air, and if heated to boiling, the whole of the gas can be expelled. In many cases the solution behaves as if it contains *ammonium hydroxide*  $NH_4OH$  ( $NH_3 + H_2O = NH_4OH$ ), and when added to solutions of metallic salts, precipitates the hydroxides of the metals.

EXPERIMENT 105.—To a solution of ferrous sulphate add some ammonia. A greenish-white precipitate of ferrous hydroxide,  $Fe(OH)_2$ , is formed.  $FeSO_4 + 2NH_4OH = Fe(OH)_2 + (NH_4)_2SO_4$ .

EXPERIMENT 106.—Treat a solution of ferric chloride in the same way. A brown-red precipitate of ferric hydroxide is formed.  $6NH_4OH + Fe_2Cl_6 = Fe_2(OH)_6 + 6NH_4Cl$ .

(To be continued.)



FIG. 26.



## Liverpool International Exhibition.

### DETAILS UP TO DATE.

(By Our Special Correspondent.)

I BELIEVE that I am the first to give a complete synopsis of the Liverpool International Exhibition, bringing all the details of the scheme fully up to date. No further introduction is needed, I think, to the rather lengthy article which follows.

Nearly all the arrangements for the show are definitely settled. The hanging of the frames (upwards of 1,500) has commenced and is proceeding briskly under the supervision of Mr. William Tomkinson, a Vice-President of the Liverpool Society. By Friday next, 6th March, everything will be in apple-pie order for the opening ceremony, which will be at once interesting and imposing. From then until Saturday, 4th April, the magnificent suite of rooms of the Liverpool Walker Art Gallery will be a scene of bustle, lectures, limelight demonstrations, and the rest of the functions attaching to an exhibition of this character.

Surprising energy and enthusiasm have been thrown into the work of organising the show. Encouraged and stimulated by the interest taken in and the ultimate success of the 1888 venture, the executive of the present exhibition have worked assiduously and arduously for several months to command a triumph in 1891. Special efforts have been made to direct attention to the extraordinary development of photography during the past year or two, and to encourage further advances in matters of photographic invention and artistic skill. To these ends the generous and hearty support of the best workers in photography in the United Kingdom have not been invited in vain, and in addition the Exhibition Committee have been enabled to collect from amateur and professional workers in various parts of the world one of the largest and finest displays of photographs ever shown. Contributions from the United States, France, Australia, Germany, India, Austria, Italy, Spain, and other countries are embraced in the unique collection, some of these being the work of gentlemen acknowledged as masters *par excellence* in the photographic world.

As finally determined, the order of procedure during the month's run of the exhibition will be:—

Friday, 6th March:—Dinner, Alexandra Hotel, Dale Street, 5 o'clock. Council, Committee, Judges, etc.

Friday 6th March:—Opening ceremony, 8 o'clock (evening dress.) Season tickets only and invited guests.

Saturday, 7th March:—From 10 a.m. to 7 p.m., specially reserved private view for country residents unable to be present at opening ceremony. Open to season ticket-holders only and their friends on payment of 2s. No invited guests.

High-class musical recitals (instrumental), at intervals from 2 o'clock to 5 o'clock.

Seven o'clock, the galleries will be open to the public; admission, 1s. Two lime-light demonstrations.

This forecast of the procedure on the first two days may be supplemented as follows. Two illustrated lectures or demonstrations will be given each evening, one at 8 o'clock and the other at 8.30. This arrangement, it is hoped, will obviate over-crowding at either of the meetings. The gentlemen who will officiate have been carefully selected, and all are thoroughly qualified as lecturers and demonstrators. Among them are:—

Mr. Paul Lange (Liverpool):—(1) A Tour in Norway. (2) The Wonders of Iceland, with personal adventures, and embracing 100 photographs now shown for the first time.

Mr. George Thompson (Liverpool):—(1) Rambles along the Riviera. (2) Up the Mediterranean, illustrated by 120 slides taken by the lecturer.

Mr. E. M. Tunstall (Liverpool):—Holiday Rambles at Home and Abroad.

Mr. W. Tomkinson (Liverpool):—The Adventures of Messrs. Camera, Tripod, and Snapshot, Members of the Black Art Club.

Mr. Fred Clibborn (Liverpool):—From the Mersey to Venice on a "Cunarder."

Mr. J. Lirrell Brown (Liverpool):—From Cairo to the Cataract.

Mr. S. G. Harris-Dearle (Liverpool):—(1) Stately Homes of England. (2) The "Moors" in Spain and Africa.

Mr. John Hargreaves (Liverpool):—The Hundred of Wirral.

Mr. C. W. Hastings (London):—The Prize Sets in AMATEUR PHOTOGRAPHIC Competitions.

Mr. Gambier Bolton (London):—Wild and Domesticated Animals, photographed and described by Mr. Bolton (as exhibited at Windsor to Her Majesty the Queen by special command).

Mr. J. A. Sinclair (London):—A Scamper across Normandy.

Mr. Thos. Brownrigg (Surrey):—Foreign and Home Scenery and Antiquities, with illustrative anecdotes and experiences. Two lectures—foreign and home.

Mr. A. R. Dresser (Kent):—On the Uses of the Hand-camera; slides, all from hand-camera negatives, viz., views, marine studies, dog studies, interiors, flash-light photographs, etc.

Mr. J. Devonport (Manchester):—Holiday Rambles.

Mr. J. W. Wade (Manchester):—Hand-camera Work.

Mr. J. Pattison Gibson (Hexham):—Northumberland, its Antiquities and its River Scenery, illustrated by upwards of 100 lantern slides by J. P. G.

Mr. Lamond Howie (Eccles):—To Ober-Ammergau and Back in 1890, illustrated by 120 slides, photographed by the lecturer. Given for the first time.

Mr. Christopher Naylor (Kerry, M——):—A Tour Round the World.

Messrs. Archer and Sons, Lord Street, Liverpool, have been entrusted with the lime-light and lantern work. Special lenses adapted for the highest possible perfection will be provided, and every arrangement made for the proper display of transparencies.

It will be seen from the above list that the Committee intend to get through some very entertaining and instructive work during the Exhibition. The refreshment department has been entrusted to Mr. L. Cottle, a noted local purveyor.

Naturally the Committee are highly gratified with the preliminary work achieved, and they look forward to the final success of the undertaking with confidence. They feel that in Captain Abney and Messrs. J. Gale, H. P. Robinson, A. W. Pringle, J. P. Gibson, and G. Watmough Webster, the adjudicators selected, they have an eminent jury whose decisions will be received with unanimity, and than whom they could not have made a better choice. The decks are thus cleared, or nearly so, for perhaps the best and most comprehensive photographic exhibition yet held anywhere. Financial and artistic success are alike assured. The gentlemen of the Executive responsible for this auspicious state of things are—Mr. Paul Lange, President; Mr. William Tomkinson, Vice-President; Mr. T. S. Mayne, Honorary Secretary; Mr. A. F. Stanistreet, Honorary Treasurer; and Mr. A. J. Cleaver, Colonel C. O. Ellison, and Mr. P. H. Phillips, Members of the Council.

In a note next week I hope to give a bird's-eye view of the half-dozen rooms comprising the Exhibition galleries, with a few remarks in advance on the general character and appearance of the exhibits, apparatus, etc.



**Sensitised Paper.**—Mr. Otto Scholzig, of 31, Binfield Road, Clapham Road, London, S.W., asks us to state that, in consequence of the continued fall in price of silver, he has decided to reduce his price of sensitised paper to the same level as it was before the rise in silver took place.

**Advertising.**—Mr. H. C. Jones, of 44, Packington Street, N., asks us to state, "that those gentlemen who do not receive an answer to their communications referring to the 'half-plate instantograph,' etc., which I advertised in your paper last week, are not to attribute it to any lack of courtesy, but to the fact that I have received so many letters that I am unable to spare the time to reply to all of them."

**Celloidin Paper.**—The new positive paper, analogous to aristotype paper, is treated in the same manner. It is rather sensitive, tones rapidly (ten to twelve minutes) in a combined bath, and only requires to be washed for half an hour. Its price is not high, and its use of the easiest. Make the print rather strong, then on coming from the frame plunge it in the following toning and fixing bath:—

Distilled water	...	...	...	...	2 litres.
Hyposulphite of soda	...	...	...	...	500 grammes.
Rhodammonium, sulphocyanide of ammonium	...	...	...	...	55 "
Acetate of lead	...	...	...	...	20 "
Chloride of gold in solution 1: 200	...	...	...	...	150 "
Pulverised alum	...	...	...	...	15 "
Citric acid	...	...	...	...	15 "
Azotate of lead	...	...	...	...	20 "

The prints acquire in this bath, which should only be used a few days after its preparation, a yellowish colour, then tone rapidly, if the temperature is from 15 degs. to 18 degs. Centigrade. Heat increases the reaction, and gives the finest tones; cold retards it. The solution in use is carefully kept in a bottle, which is filled up after each operation with some fresh solution. The other operations are the same as for albumenised paper.—*Les Annales Photographiques.*



## Notes from the Liverpool Centre.

(By our District Editor.)

MR. H. E. BURN, the worthy and accomplished President of the Walton Society, read a very interesting paper on "Photography," to the members and friends of St. John's (Walton) Literary and Debating Society a few nights ago, giving a concise history of the progress of photography, and the connection of the art-science with astronomy. A number of excellent studies were shown by limelight, the former being the work of Mr. Burn and Mr. Park. I hear that the lecture is likely to lead to a number of recruits for the already large and influential army of photographers.

Another good lecture was that of a Mr. Arthur Evans, of Haydock, who at Waterloo last Saturday discoursed on "Ober-Ammergau, and its Passion Play." Numerous limelight illustrations were shown. Vice-Chancellor Rendall, Principal of Liverpool University college, presided. It is in connection with a class at this college that Dr. Kohn's lectures on "Chemistry and Photography" are being given.

Probably most readers of the AMATEUR PHOTOGRAPHER will have noticed the following paragraph in a recent issue of the *Daily Graphic*:—"Different persons will naturally receive with different emotions the news that a process has been discovered for the photographic reproduction of all the colours in the spectrum. When we go to have our portraits taken, few of us are disposed to insist upon a too servile realism; and it is generally thought to be the chief charm of the photographic art that it throws a false glamour over the pale faces of valetudinarians and the rubicund noses of the bibulous. In the country, where the roses bloom upon the buxom cheeks of the inhabitants, the new invention will no doubt be welcomed cordially; but in the towns, where the fogs and the underground railways act upon the liver, and the liver re-acts upon the complexion, one is by no means so sure of its reception."

The subject is attracting much critical attention here among nearly all classes of workers in photography.

On Thursday, this week, the members of the Liverpool Society had much to engross their attention at the ordinary monthly meeting. Eight new members, including one lady, were to be elected, and Mr. J. A. Sinclair, recently removed from this city to London, was to be made an honorary member of the society. Among the novelties down for exhibition was Messrs. Marion and Company's new hand-camera for 1891, "The Radial." Dr. B. Jumeaux, of the Manchester Amateur Photographic Society, contributed a paper on "Eikonogen v. Pyro." In consequence of the exhibition, it has been decided not to hold the usual monthly meeting in March.

Coming to exhibition matters, I may state that invitations have been sent out to a number of gentlemen to attend a dinner at the Alexandra Hotel, on Friday, 6th March, when the judges and Council will be present. Season-tickets were ready for sale last Monday. Special invitations for the opening night will be sent to every member of the Liverpool Society for self and friend; if extra invitations are required, members are requested to communicate with the Secretary, Mr. T. S. Mayne. It has been arranged that the opening ceremony shall take place at eight o'clock on the 6th ult., when the entire suite of rooms at the Walker Art Gallery, including the permanent collection of pictures, will be open to inspection.

## Notes from Paris.

ANY photographer who has ever had a parcel of sensitive plates opened by an obstinate official, and consequently spoilt, at a foreign custom-house, will bless the Syndicate of Photographic Apparatus Makers of Paris for the polyglot tickets which one of its members has just brought out. The tickets are printed in 22 languages, and bear an inscription, which in English runs, "To be kept from daylight. Not to be opened except by the person to whom it is addressed." Two of the tickets—Volapuk and stenography—do not appear to be of much use, for Volapuk is extinct, or at best only used by a few "cranks," and anyone who can read French in shorthand must surely be able to read it in print. Still, the others are useful, and one or more of them affixed to a box of plaques might have the desired effect of preventing various foreign officious officials from opening the package,

and so ruining the contents, though, from what I know of foreign custom-house officers, the knowledge that they were doing a serious mischief would in many cases only add a zest to their enjoyment.

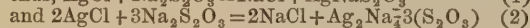
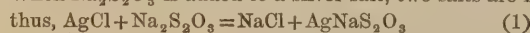
The *New York Herald* (Paris edition) published a deliciously naive article on photography in colours a few days ago. The writer thought it necessary to inform photographers that if they were under the impression that they would ever be able to take a coloured negative, and strike off coloured pictures from it, they were labouring under a delusion, and might as well hope to obtain motion without force. It is absolutely impossible, even for the *New York Herald*, to know all that science may one day achieve, but I take it for granted that photographers would be content for the time being if by some cheap and easy process they could fix natural colours on a positive plate.

## Quarterly Examinations in Photography.

**Question 13.**—*Explain the chemistry of fixing. Is there more than one variety of fixing bath? Give formulae, and state advantages and disadvantages of each.*

ANSWER.—Fixing is the removal of any sensitive salt unacted upon by light or by the developer. This is usually done by the solvent action of sodium hyposulphite, which we take as an example.

When  $\text{Na}_2\text{S}_2\text{O}_3$  is added to a silver salt, two salts are formed;



being (1) double hyposulphite of silver and sodium, and (2) hyposulphite of sodium and silver.

The first salt is soluble in  $\text{Na}_2\text{S}_2\text{O}_3$  (not quite in  $\text{H}_2\text{O}$ ), therefore excess of  $\text{Na}_2\text{S}_2\text{O}_3$  should be used, and a second bath is to be recommended for this. When this salt is completely dissolved out, the plate, film, etc., is no longer sensible to light, and needs only careful washing to render it permanent.

Several fixing baths exist; they are given in order of superiority generally:

1. Hyposulphite of sodium,  $\text{Na}_2\text{S}_2\text{O}_3$ . (Advantages: Cheap, very soluble in water, not too powerful, does not destroy half-tones. Disadvantages: Difficult to eliminate.)

2. Cyanide of potassium, KCN. (Advantages: None over 1. Disadvantages: Expensive, too powerful, destroys half-tones, and is a deadly poison by absorption and otherwise.)

3. Sulphocyanide of potassium, KCNS.

4. Sulphocyanide of ammonium,  $\text{NH}_4\text{CNS}$ . (Advantages: None over 1 or 2. Disadvantages: Expensive, fixing power not good.)

5. Magnesium chloride,  $\text{MgCl}_2$ . (Advantages: None. Disadvantages: Expensive, not easy to control in action. BIARRITZ.

**Question 14.**—*How would you intensify a plate with very dense high lights and very weak shadows?*

ANSWER.—For intensification of a negative with very dense high-lights and very weak shadows, the following is a formula by Dr. Eder:—

The negative is soaked in the following solution until thoroughly bleached, the image being converted into chloride of silver—

Hydrochloric acid	...	...	...	...	3 c.c.
Bichromate of potassium	...	...	...	...	1 gram.
Alum	...	...	...	...	5 "
Distilled water	...	...	...	...	100 c.c.

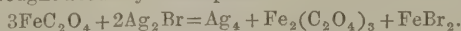
When bleached, the image is washed in running water until the film shows no yellow tint. The negative is then treated with an old quinol developer; if the action of this is stopped before the high-lights are fully reduced, the plate again fixed and washed, a more harmonious negative will be the result. E. B.

**Question 15.**—*Describe the method of developing bromide paper with ferrous oxalate?*

ANSWER.—The ferrous oxalate developer is generally prepared by mixing saturated solutions of ferrous sulphate and potassium oxalate in the proportion (for the normal developer) of one part of the former to five of the latter. The iron should always be added to the oxalate, as, if mixed the other way, a precipitate is formed; to every ounce of the above solution about  $\frac{1}{2}$  gr. of potassium bromide should be added. The developer must be distinctly acid, and may be acidified with citric or sulphuric acids. Prior to development the paper should be soaked in clean water for a few minutes. The water is then poured off, and the developer (prepared as above) poured on with an even sweep. The dish is then gently rocked, and in a short



time the image will begin to appear, and as soon as the desired result is obtained, development must be stopped, and the print transferred to the clearing bath. Here is the equation representing the chemical change brought about by development:—



If there is insufficient contrast in the negative, it may be increased in the print by strengthening the developer, that is, by increasing the proportion of ferrous sulphate; but if, on the other hand, there is too much contrast in the negative, it may be considerably reduced by using a weak developer, that is, a developer with a small proportion of iron. An old developer, strengthened with a little new, gives very vigorous results.

SUNESIS.

Papers have been received from, and marks awarded to: A. C. S., Developoid, Worfield, Lindem, R. C. M., Electra, Biarritz, Sunesis, E. B., C., Spain.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Belfast.**—The first of a series of limelight exhibitions in connection with the Y.M.C.A. Camera Club was given on the 6th inst. in the hall of the Y.M.C.A., Wellington Place, before a large audience. The exhibition consisted of the 1890 prize slides, an interesting descriptive lecture being given by Mr. Edward Riddell. These exhibitions will be continued on March 9th and 16th.

**Birmingham.**—A meeting of the section of this Society which has undertaken to survey, photographically, a part of the county of Warwick, was held on the 19th inst., Mr. Jethro A. Cossins, the well-known architect and archaeologist, being in the chair, and a large number of photographers present. The officers of the section for the coming year were elected as follows:—President, J. B. Stone, J.P., F.L.S., etc.; Vice-President, J. A. Cossins; Treasurer, S. G. Mason; Secretaries, Messrs. J. H. Pickard and W. Jerome Harrison, with a Committee of eight members. It was resolved that the work of the coming season should be confined to the Hundred of Hemlingford, which forms the northern part of Warwickshire, including Birmingham, Tamworth, Nuneaton, Solihull, etc. The six-inch ordnance map is to be the basis of the survey, and each member was requested to undertake one of the sheets of this map, with a view to securing a photograph of every prominent, remarkable, or historic object contained in that sheet. It was further resolved that each worker should "report progress" by the end of June.

**Blackburn.**—An exhibition of the AMATEUR PHOTOGRAPHER Prize Lantern Slides was given in the Society's rooms on the 13th inst. Those on Mawson plates, developed with hydroquinone, gave the most satisfaction, and the architectural subjects were considered the best.

**Brechin.**—The Photographic Association closed the lectures at the Mechanics' Literary and Scientific Institution for the session with an illustrated lecture by Mr. T. C. Hepworth, F.C.S., "All About a London Daily." The lecture was fully illustrated by a series of lantern slides, showing the progress of an illustrated newspaper from the rag store and paper mill to the finished production on the breakfast-table. At the close of the lecture nearly 100 slides of various views throughout Scotland and South Africa were exhibited, the work of the members of the Association.

**Brixton and Clapham.**—On the 21st inst., there was a special lantern evening, after which a flash-light demonstration was given by Messrs. Bartrop and Kent.

**Cornish.**—Mr. Henry Tonkin gave an interesting lecture on "Flashlight Photography." The illustration was the taking a photograph, developing, and printing on paper. But several instantaneous photographs, lent by the Editor of the AMATEUR PHOTOGRAPHER, showed still further what may be done in this direction.

**Colchester.**—The annual meeting of this club was held on the 23rd inst., the Rev. C. L. Acland, M.A., President, in the chair. The executive were entirely reappointed, with the addition of Mr. Morton Mathews as a member of the Committee. The financial report showed a balance in hand. The year's work, as detailed in the report, was read. The popular Mayor of Colchester, Lent J. Watts, Esq., was elected a member of the club. The services of the Honorary Secretary, Mr. Harry Wright, were cordially acknowledged. It was announced that the Gresham Professor of Astronomy would again lecture to the club, with photographic illustrations, on Monday, March 16th. Mr. J. C. Thurstone exhibited to the members the compact enlarging and reducing camera made by Messrs. Lancaster and Son, and another member, Mr. G. W. Baskett, exhibited a whole-plate

portrait taken by flash-light on a Castle plate; an autotype portrait printed by flash-light, and a view printed out on Scholzig's matt silver paper in 30 seconds by magnesium light.

**Croydon.**—The 20th inst. was a lantern evening, the President being in the chair. Mr. Low Serjeant passed a very interesting series of slides through the lantern, entitled "Round About Exmoor." The whole of the pictures were taken on films, and the slides were of a high order. Mr. Sarjeant operated the lantern, and Mr. Sheldon, who accompanied him on his tour, very ably gave a short description of each slide as it was passed through the lantern, coupled with numerous amusing incidents that occurred on the way. The next ordinary meeting will take place on March 6th, and lantern night March 20th.

**Devon and Cornwall.**—The members recently received from a society at the Cape of Good Hope a batch of photographic slides of Cape views, which were much appreciated and admired. On the 16th the members met and selected some eighty slides of English scenery, local and general, for transmission to the Cape society. A large number of views, contributed by several of the members, were shown by means of the oxy-hydrogen light, and included some very beautiful views of Flete House, Maristowe, Exeter Cathedral, seascapes at Newquay, Torquay, and picturesque scenes of other places of interest in the two counties. Mr. Percy Pearse was unanimously elected a member of the club.

**Dukinfield.**—The annual exhibition was held on the 13th and 14th inst., in the Co-operative Hall. The room itself was most picturesquely festooned with delicate coloured drapery. From eight o'clock on Friday evening to one on the following morning a large gathering of about 150 went in for dancing. At intervals Mr. W. H. Shirley and Mr. Woodville, of Manchester, gave songs and recitations. Mr. Arthur Sampson's orchestral band supplied the necessary music. Attention was first drawn to a collection of large prints in frames, by Mr. J. Jenkinson, and also a collection of pretty cloud studies and seaside scenes, 12 by 10, by Mr. T. Glazebrook, whilst Mr. W. Chadwick had on view a series of whole and half plate frames. The President exhibited the results of his labours in photography by the instantaneous process. There were scenes from the Dukinfield streets at the time of the whitsuntide processions, views from Belle Vue, Morecambe, etc., the representation of a milk-cart in a snow-storm, and various other interesting sights. One frame, containing ten instantaneously-taken pictures, was awarded the Silver Medal in the AMATEUR PHOTOGRAPHER Lantern Slide Competition. He had also a few enlargements of the little sketches caught by the hand-camera, which included a view of the old mill at Ambleside, Mr. W. Leigh had two frames of pretty sketches, and Mr. H. Broadbent had also a good show, as well as Mr. J. Winterbottom. Messrs. A. and J. Sampson exhibited a number of prints, which included a group of the portraits of the winners of the gold and silver challenge shield belonging to the 3rd Manchester Regiment. Mr. R. Mathews was represented by a picture of the Roman bridge at Marple. Dr. Hamilton stood well to the front with some picturesque scenes from Switzerland in platinotype, and there was close by a large frame of bromide prints by Mr. W. Greenwood. On the table there were laid a goodly and well-assorted selection of stereoscopic slides, belonging to Dr. Hamilton, Messrs. T. Borse, and T. Glazebrook, as well as transparencies and lantern slides by Messrs. J. Winterbottom, T. Glazebrook, W. H. Shirley, W. Chadwick, and T. Borse, and the latter had some whole-plate enlargements. Mr. W. Jenkinson was represented by whole-plate silver prints, which contained amongst them a picture of last year's exhibition at the Co-operative Hall, neatly executed. Messrs. R. Deakin, J. Leach, and J. W. Hadfield were well represented, the latter with a flashlight photograph of Mr. Glazebrook, and photographs of bicycle champions taken at the Ashton sports. An enlarged picture of Haddon Hall, by the cyanotype process, by Mr. J. T. Lees, and coloured to obtain a moonlight effect, was very pretty. Mr. Jenkinson gave an excellent lime-light lantern entertainment on Saturday. It may be stated that altogether there were 400 prints and 270 transparencies exhibited.

**Ealing.**—There was a largely-attended meeting of the members and their friends on the 19th inst., evidently attracted by the announcement that the AMATEUR PHOTOGRAPHER 1890 Prize Slides were to be exhibited. The chair was taken by the President (Mr. H. W. Peal). The Society unanimously resolved to support the petition which is being prepared for presentation to the railway companies on the subject of cheap fares. The question box contained these questions: (1) Is it always advisable to use very rapid plates for instantaneous work; cannot slow plates be used in some cases? (2) What was the cause of the red appearance of some of the slides at the last lantern meeting? Both these questions were spoken to by the President and Mr. Whiting. The Prize Slides were then exhibited, and were much admired, the optical lantern manipulated by Messrs. C. N. Neal and T. Simpson doing full justice to these artistic and clever productions. Several slides by the following gentlemen were also exhibited: Mr. Harry M. Elder, G. W. Slatter, Dr. Gibbons, Mr. Whiting, and the President. The next meeting



will be on the 5th March, when Mr. R. Whiting will read a paper on "Intensifying and Reducing."

**East Southsea.**—The fortnightly meeting of this Society took place on the 3rd inst., it being members' lantern night. The attendance included many visitors. About sixty slides were shown and were much appreciated by those present. The slides, which were all the work of members, included some splendid views of the Peak district of Derbyshire, some of which were accepted and published by the *Daily Graphic*. Mr. H. Hickey was unanimously elected a Vice-President. The first exhibition of this Society was held on the 17th inst., in place of the ordinary fortnightly meeting, and was well attended by a large number of members and their friends. The pictures sent in, which were as varied as they were numerous, were well criticised and admired by those present, one of the chief objects of attraction being a fine panel portrait, just received, of General Sir George Willis, K.C.B., the Society's patron. Mr. Israel Harding, V.C., R.N., exhibited a splendid collection of whole-plate photographs of Egypt. Other leading exhibitors were Messrs. Cleminson, Fielder, Wright, Winslade, Green, Parke, Fogwell, Misslebrook, Gower, etc. Mr. J. J. Thornton has been elected an honorary member.

**Enfield.**—A good number of members assembled on the 18th inst., when Mr. J. Howson gave a very interesting demonstration with "Alpha Paper, Special Lantern Plates, etc." He exposed three plates, two to ordinary gas-light, giving 15 and 20 secs., and one to the light of an ordinary wax vesta as long as it kept burning. They were then placed in the Ilford hydroquinone developer together, with the result that it was impossible to distinguish one from another when finished. The beautiful specimens brought by the demonstrator were much appreciated by those present. Five new members were elected.

**Epping Forest.**—This Society held its first public display on the 18th inst., in the Fillebrook Lecture-hall. The proceedings opened with an exhibition of members' work, which was inspected with much interest by a large company of visitors. There were some 300 pictures, many of them being *Boys' Own Paper* competition prints lent by the Editor, and others shown by the Stereoscopic Company. The Rev. J. Bradford then gave a practical and interesting description of the process of taking a photograph, from the unexposed plate to the finished print. An excellent selection of slides was then shown, many of the local views by members being especially appreciated. Messrs. Mawson and Swan, the Britannia Works Company, and the Stereoscopic Company also lent some fine slides, which showed the splendid qualities of their respective plates. The Society scored a success which it is hoped will lead to a large increase in its membership. At the next meeting, on March 16th, Mr. H. W. Bennett will read a paper on "Negative Making." The Hon. Sec. is Mr. J. W. Spurgeon, Drayton Villas, Leytonstone, Essex.

**Formby.**—The ordinary meeting of this Club was held on the 23rd inst. The subject for the evening was "Bromide Enlargements" with the enlarging camera and magnesium ribbon. The Hon. Secretary (Mr. S. R. Hunt) succeeded in turning out a creditable picture, enlarged from half-plate to 12 by 10.

**Glasgow.**—The usual monthly meeting was held on the 16th inst., Mr. John Morison, jun. (President), in the chair. Six new members were elected. Professor Barr, of the University, showed and explained an ingenious apparatus of his own invention for photographing book illustrations and diagrams, so that they might be projected on the screen by means of the optical lantern, thus saving the expense and labour of drawing elaborate cartoons for lecturing purposes. The apparatus was examined by the members, and the President made two enlargements from hand-camera negatives by means of the lime-light lantern, and Mr. V. L. Alexander showed about thirty slides through the lantern, illustrating a tour to Stornoway. This meeting was one of the largest of the session.

**Glenalmond.**—At the ordinary fortnightly meeting held on the 21st inst. Mr. E. H. Cunningham Craig delivered an interesting address on "Lantern Slide Making and Painting." Messrs. C. C. Robertson, Glasgow; A. M. Dykes, F. Moore, and F. H. Harrison were enrolled as members.

**Hereford.**—A meeting was held at the Mansion House. The Rev. W. Bowell, one of the Vice-Presidents of the Society, presided. Mr. W. E. Haines exhibited a new lantern which has recently been purchased for the Society, with the view of encouraging the taking of lantern slides, and by its means a number of views of scenery in Switzerland, taken by Mr. Watkins, were shown. It was also resolved to purchase a screen for use in connection with the lantern.

**Holborn.**—The 11th inst. was a lantern evening. On the 20th inst. Mr. Lowe in the chair, the Secretary read a communication from Mr. L. M. Biden with respect to a meeting at the rooms of the Photographic Society of Great Britain, and Messrs. Smith and Golding were elected to represent the Holborn Camera Club on that occasion. A demonstration on "Enlarging on Bromide Paper," by Messrs. Smith and Benest, was then given, Mr. Benest using Lancaster's enlarging apparatus and Ilford paper, and Mr. Smith used the

Club lantern, and an arrangement of his own for using his own lens, making trial exposures on slips of Ilford, Fry's, Mawson and Swan's, and Eastman papers, and afterwards exposing a sheet of each, giving the exposures found necessary, and both gentlemen getting good results in each case, using ferrous-oxalate developer. The Club exhibition and cinderella dance will be held at Anderton's Hotel, Fleet Street, on Saturday, March 7th.

**Lantern Society.**—An admirable series of lantern slides attracted an appreciative audience to 20, Hanover Street on the 23rd inst. Commander C. E. Gladstone, R.N., manipulated the lantern, and added to the interest of the exhibition by explanatory descriptions of the slides. The first set which was shown on the sheet comprised some hand-painted slides by Mr. Evans, which were appreciated for their artistic excellence. The venerable appearance of Canterbury Cathedral has been well delineated by Mr. Evans, the distance effect in the crypt being specially good. A slide representing the organ screen was applauded, the detail being extremely clear. Some landscapes on the Thames, including a beautiful view of Mapledurham, followed. The negatives for these slides were all taken in a quarter-plate camera, and most of them on Mawson's plates. Mr. Hall Caine would have enjoyed an excellent view of the Isle of Man, which was taken with fixed-focus lens. A slide from a photograph of Pangbourne was very much admired. The negative was taken on the 5th of November last, but no firework display gave variety to the landscape. "Sunset at Mapledurham" was the title of a fair representation of one of the prettiest spots depicted by Mr. Evans. His view of Trafalgar Square, including a back view of Mr. Hamo Thornycroft's newly-erected statue of General Gordon, was not so well chosen. The wonderful slides by Messrs. Carpenter and Westley, where the artist has drawn the subjects on bare glass, were next shown, and, as usual, excited great admiration. Some Egyptian interiors were rendered in the most vivid manner. One slide gave the impression of a five o'clock tea party taking place under the shadow of a sphinx. Views of Smyrna and Burgos were very good, slides representing the cathedral at Burgos receiving loud applause. The latter were drawn upon a surface of three inches diameter, and were remarkable for their fidelity. Venice, Stratford-on-Avon, and an unfinished slide of the interior of St. Paul's, at Rome, completed this series. The contrast between the hand-painted slides of fifty years ago and the slides of the present day was very apparent when the next series appeared on the sheet. These were modern subjects lent by Messrs. Newton. In some cases these slides were very highly coloured, and comprised not a few angelic subjects. The eyes of these latter were apparently blackened, and the style of the slides was slightly exaggerative. Those depicting the celebrated pictures, "The Rock of Ages," were better appreciated. The fourth series was formed of coloured photographs by Mr. Hicks. These were originally collected for the purposes of a lecture delivered by that gentleman in 1879 at the Polytechnic. They are now for disposal with accompanying MSS., and are certainly of a highly popular nature. Very excellent views of Portugal were selected by Commander Gladstone as samples of the work of Mr. Hicks. After a brief interval the exhibition was continued, and included many other interesting specimens of lantern slides, which met with approval from the audience.

**Leeds.**—On the 15th inst. the second of the series of elementary lectures was given by the Hon. Secretary (Mr. S. A. Warburton), his subject being "Development." Previously to entering upon the subject of actual development, Mr. Warburton stated that it would be well to trace the sensitive plate from its package to the developing dish. In the first place he advised the "backing" of all plates with burnt sienna backing, in order to prevent halation; and with respect to exposure, a little experience gained by exposing a couple of dozen plates upon, say, half a dozen different subjects, making three or four exposures of varying lengths of time upon each subject, carefully noting the conditions as to plate, subject, stop, light, etc., and after development making a note of the result, was worth all the exposure tables yet invented. An exposure book of this kind formed a record of actual experience which would, with constant additions, in time become invaluable. Mr. Warburton then proceeded to develop a number of previously exposed plates by means of the ferrous-oxalate, hydroquinone, and pyrogallol acid developers, stating that for his own use he greatly preferred the latter, used with ammonia, and urged those present to make themselves thoroughly acquainted with this developer as possessing great power, and being the most under control. The operations of intensification and reduction were afterwards dealt with.

**Liverpool (Y.M.C.A.)**—On the 18th inst. Mr. R. S. Archer gave his lecture entitled "My Trip to Western Norway," Mr. J. F. Stone presiding. The views were excellent, and were frequently applauded by the members and friends. Mr. Jno. C. Lee manipulated the lantern.

**Loughborough.**—On the 20th inst. the Photographic Section gave its annual lantern slide exhibition before the members of the parent Society. The Rev. C. W. Vick described the slides (over two



hundred in number), which were projected on to an 18 ft. screen by a powerful lime-light lantern, manipulated by Mr. W. Clarke. The following members contributed slides—The President (J. B. Colgrove, M.A.), the Vice-President (Ald. W. C. Burder), Messrs. A. D. Bartlett, Underwood, Riley, Wright, Handford, Dr. Parke, and the two Hon. Secs., Messrs. W. Clarke and Mr. T. Tucker. At the conclusion an experiment was attempted to illustrate development. A tank with glass slides was fitted into the stage of the lantern, and a plate exposed, developed, and then projected upon the screen. The result was a very good portrait of the Mayor (Ald. Bumpus, J.P.).

**Louth.**—The annual meeting was held on the 16th inst., the Rev. C. W. Whistler, President, in the chair. The annual report showed a membership of fifty, including fourteen ladies, and a good balance in favour of the society. Some alterations in the rules were made, and the following officers were elected for the ensuing year:—President, Captain Ranshaw; Hon. Sec. and Treasurer, Mr. S. Francis Clarke, L.D.S.; Assistant Sec., Mr. Herbert Bentley; Committee, Rev. J. M. Coates, Rev. C. W. Whistler, Mr. C. James, Mr. A. R. Yeoman, Captain Fowler, and Mr. Walter Shephard.

**Morley.**—The members had a lantern evening on the 18th inst., when there was a large attendance of members and friends, Messrs. Atkinson, Smith, and Tomlinson contributing the slides, many of which elicited great admiration. Tuesday, March 3rd, is set apart for the exhibition of AMATEUR PHOTOGRAPHER prize slides.

**Newcastle-on-Lyne.**—The ordinary monthly meeting was held on the 20th inst., Mr. James Brown in the chair. The American lantern slides were shown on the screen, and the AMATEUR PHOTOGRAPHER Prize Stereoscopic Competition Slides were also on view. Both series were appreciated by those present. Six new members were elected.

**North Kent.**—A soirée in connection with the above Society took place at the Anglo-Saxon Hall, Gravesend, on the 19th inst. The AMATEUR PHOTOGRAPHER Monthly Competition Prints No. 19 were on view. There was an exhibition of lantern slides lent by members.

**North London.**—The general meeting was held on the 17th inst., Mr. A. Mackie in the chair, this being the evening on which the long-talked-of lantern slide competition was to take place. Two lanterns had been arranged side by side by Mr. Bishop; two discs were thus thrown upon the screen side by side on which the slides were to be shown. Four quarter-plate negatives, each presenting some difficulty, had been kindly selected and lent by the Chairman some months beforehand, and these had been in the possession of each member who wished to take part in the competition, for one week. Lantern slides were to be made from them on any plates and by any method or developer which the member might choose to adopt. Clouds were to be added or not at the will of the competitor. No prizes were offered, but the honour of securing a place in the competition seems to have been sufficient incentive, for no less than thirteen sets of slides were sent in, the vote for superiority being taken by show of hands, and the slide adjudged second best being quickly removed from the screen, another taking its place, perhaps, in its turn, to pale before the other. Mr. Parfitt took first place with Mawson's plates by contact, developed with pyro, ammonia, and carbonate of ammonia, standing second in sets 1 and 3, and first in set No. 4. These slides were of a beautiful warm-brown tone. Mr. Smith with a wet collodion plate in camera by daylight and afterwards toned, took first place in No. 2 set. Mr. Grover with a Cowan's chloride plate, developed with hydroquinone, and afterwards toned with gold, took first place in No. 1 set. Mr. Dando with a collodio bromide plate took second place in No. 4 set. Mr. Farmer with a slide on Thomas's plate by contact, developed with pyro and ammonia, took first place in set No. 3, and Mr. Kew with one of the new Ilford plates for black tones, by contact, developed with hydroquinone, took second place in set No. 2. In several of the sets there was little to choose between Nos. 1 and 2 slide. The Secretary announced that it had been found necessary to postpone the annual exhibition to March 17th, and therefore the meeting on March 3rd would be a technical evening, and Mr. Newman would give his paper on "High Speed Shutters" later on.

**North Middlesex.**—At the meeting on the 23rd inst., Mr. J. Saville in the chair, Mr. Lewis Medland exhibited his beautiful and interesting collection of slides, entitled "A Day at the Zoo." These were about 250 in number, and most of them had been taken under great difficulties, and in some cases even with danger; they were remarkably fine, wonderful definition and detail having been secured. The lecture afforded much sound information as to the structure and habits of the animals, and was enlivened with stories of Mr. Medland's adventures in South Africa and the plains and rocky deserts of Western America.

**Nottingham.**—The fortnightly meeting was held on the 16th inst., Mr. S. Wells, President, in the chair. Mr. Councillor Abraham Pyatt and Mr. Thos. Warwick were unanimously elected members. Mr. Howson, of the Britannia Works Company, gave a practical

demonstration on "Alpha Paper Printing," exposing and developing several prints. Mr. Howson also exposed and developed several of the Alpha lantern plates, and fully demonstrated the range of tone obtainable by prolonging, exposing, and developing. The society have had a most successful week in lantern-slide making, every evening being devoted to demonstrating; the plates used being Mawson and Swan's, Fry's, Edwards's and Thomas's, the results forming a nucleus for a loan collection for exchange with other societies. The usual vote of thanks brought a most enjoyable evening to a close.

**Paisley.**—The fifth annual exhibition of the above Society was opened in the Art Gallery of the Free Library and Museum on the 14th inst., and will remain open for a month. There is a large show of pictures, entirely the work of the members of the Society, and in a few of the classes the judges had a difficulty in making the awards on account of the close competition. Altogether, the work is of an order of merit sufficient to show that the members continue to make steady progress in the art, while in some instances the exhibits are remarkably good. The following are the awards:—In Class A, landscape and architecture, Mr. Matthew Morrison and Mr. Robert Ferrier were equal, while the frame by Mr. Alex. Thomson was highly commended. In Class B, for portraits or groups, in-doors or out-doors, the first and only award was given to Mr. A. F. M. Callum. The first prize was awarded to Mr. Alex. Thomson in Class C, for photographs taken during the Saturday afternoon excursions. In Class D, copies of engravings, etc., there was a very good competition. The first prize was awarded to Mr. Thos. H. Taylor, and the second to Mr. Alex. Kilpatrick. There was also keen competition in Class E for the Society's prize for marine and instantaneous work. The first prize (silver medal) was awarded to Mr. David B. Jack, and the second (bronze medal) to Mr. Robert Ferrier. In Class F, for lantern slides, first place was taken by Mr. James Mure, and second by Mr. Alex. Kilpatrick. The judges in the competition were Mr. T. N. Armstrong and W. B. Smith, Glasgow, and Mr. John Fullerton Merkworth.

**Richmond.**—At the meeting on the 20th inst. there was a very full attendance, Mr. Ardaseer in the chair. The award of Mr. J. B. B. Wellington on the recent competition in landscape photography was made known, and the batch of prints handed to the successful competitor, Mr. Ardaseer, Mr. C. Hussey not being sufficiently recovered to give his promised demonstration of the "Collodio Bromide Process." Mr. Cembrano filled the vacancy, and gave a practical illustration of the difference in tone which can be produced in gelatine lantern-plates, simply by varying the exposure. Using the same negative and same developer, he exposed and developed three plates, giving to the second four times, and to the third sixteen times the exposure of the first. An excellent slide resulted in each case, but the tone varied from a brown-black in the shortest exposed to a warm purple in the longest.

**Selby.**—At a meeting held on the 10th inst., the President (Mr. Rawling) in the chair, Mr. J. C. Thompson gave a most interesting account of "How to Enlarge" with the lantern, and also by means of an easel, etc., of his own invention, followed by a practical demonstration. The annual meeting was afterwards held. The question of having a room for meetings, and a dark-room was considered, but it was decided to adjourn the meeting for a fortnight, in the hope that a likely room would be found, and at which meeting there is to be an exhibition of lantern slides. It is intended to hold the meetings about once a fortnight, and some papers have already been promised. The Secretary, Mr. Atkinson (Churchyard, Selby), will be very glad to receive names of persons wishing to join.

**Staffordshire Potteries.**—The annual meeting of this Society was held on the 17th inst. The annual report, which detailed the work done for the past season, was read. It stated that the membership roll numbered thirty-four members, that fourteen new members were elected during the year, and that there was a balance in hand at the close of the year. The President, Mr. R. S. Burgess, was re-elected, The Mayor of Burslem, Mr. W. Woodall, M.P., and Mr. W. Burgess were elected patrons; Messrs. T. Blackshaw, E. B. Wain, and F. Bettany, Vice-Presidents; Mr. S. Crosse, Treasurer; and Messrs. J. F. Hewitt and F. C. Powell, Hon. Secs. A hearty vote of thanks were accorded to the officers for their services during the past season. The programme for the ensuing season was arranged. The Secretaries reported that at the March meeting Mr. Walley would give a paper on "Architectural Photography."

**Spen Valley.**—The last meeting was held on the 17th inst. Several subjects of current interest, notably M. Lippmann's discovery of photographing colours, were discussed. During the evening the President read an interesting and instructive paper on "Outlines of Photographic Optics," in which, after a preface on the pleasures of study, he described the law of refraction, and explained the properties of the various lenses and the utility of the stop. A discussion followed the reading of the paper.

**Sydenham.**—A meeting was held at the "Greyhound" Hotel



On the 17th inst., Mr. T. C. Cole in the chair. A memorial to the London and suburban railway companies in favour of cheap fares for photographers was laid before the club, and it was decided that the Secretary should sign same on behalf of the members. Mr. Zimmer then read a paper on "Platinum Printing." By the courtesy of the Manager of the Platinotype Company, he was able to give the members not only reliable information but also a new formula for developing. During the course of the evening he developed a number of prints, including one on paper ten months old with very good results, thus proving that with ordinary care the paper can be kept for a greater length of time than is generally supposed. Mr. Piggott remarked that warmer tones could be obtained by mixing a few drops of bichloride of mercury in the hot bath, and a general discussion by the members then followed.

**Toynbee.**—The meeting on the 19th inst. was a lantern evening.

**West Kent.**—The ordinary meeting was held at Bexley on the 18th inst., the President, Mr. Andrew Pringle, in the chair. Messrs. C. H. Lyster and J. P. Holmes were proposed as members under the new rule. Mr. Willis, of the Platinotype Company, was then called upon for his paper on "Platinum Printing," which was very much appreciated, some valuable hints being given. The next meeting will be held at the Station Hotel, Sidcup, on Monday, March 2nd.

**West Surrey.**—The third lantern-slide exhibition of the West Surrey Photographic Society was held at Crichton Hall on the 17th inst. About 200 members and friends were present, and about 350 slides were passed through the lantern. The slides were described

by Mr. Davison (the well-known and popular Vice-President of the Society.) Sets of slides were kindly lent by Messrs. Mawson and Swan, and the Fry Manufacturing Company, while Mr. Gale (the President) showed some of his masterpieces, greatly to the enjoyment of the company. Amongst others who exhibited were Messrs. Dixon, Berry, Tims, and Davison. The third annual exhibition of this Society takes place on March 12th, 13th, and 14th, at the above hall, when a most interesting display of pictures and lantern slides will be placed before the public.

**Wigan.**—The 19th inst. was a lantern night. The President provided the lantern. There were not very many slides shown, as only a few of the members are slide makers. The President showed some slides of the district, also a few of Somerset, including Wells Cathedral; Mr. Newman, several Scripture subjects, principally from Cassell's Doré Bible; Mr. A. Smith, a few comic slides; and Mr. F. Betley, slides of local and other scenery. Messrs. Arthur H. Tuer and J. Hodgson were proposed as members. The next meeting will be on March 5th, when the President, the Rev. G. F. Wills, will read a paper.

**Woolwich.**—The fortnightly meeting was held on the 12th inst., when a paper was read by Mr. Hall, entitled "Enlarging, and how I Manage It." The reader showed that, with a little ingenuity, it was quite possible for the amateur to produce very good work without recourse to the expensive apparatus now considered almost necessary, and this was amply borne out by the specimens of his work. Two new members were enrolled at the close of the meeting.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4527. **Hire of Studio.**—Shall be glad to know if there are studios to be hired by the day, or part of a day by amateurs. In the West-end preferable. I should want some scenery, but no assistance, and don't want to pay a large price.—**THISTLE.**

4528. **Development, Hand-Camera Negatives.**—Will some reader kindly give best formulae and mode of developing the above snap-shots?—**J. W.**

4529. **Developer Ready-made.**—Can any of your readers tell me of a good ready-made developer for Ilford dry ordinary plates and Ilford rapid, and where to get it and the price?—**STANLEY LEONARD WILTON.**

4530. **Black Tones.**—Can any one tell me how to get black tones on Ilford Alpha lantern plates?—**CLEVEDON.**

4531. **Optimus Hand-Camera.**—Should be glad if some kind friend would give me their opinion of the above, sold at £6 6s. Any information would be very acceptable.—**P. L. S.**

4532. **Celluloid Films.**—Where can I obtain films of about the same rapidity as ordinary slow plates? Does Thomas make these? Can they be relied upon for results equal to those on glass plates? Any information with regard to names and addresses of makers will oblige.—**CYCLO-PHOTOGRAPHER.**

4533. **Bicycle Carrier.**—Can any of your readers inform me what is the best method of carrying a half-plate kit on a safety bicycle so as to reduce the vibration to a minimum?—**W. G. O.**

4534. **Saturators.**—Would be glad of competent opinions as to the comparative merits, expense of burning, and safety, respectively of Scott's "warm air saturator," "the ether saturator," compared with compressed coal gas, for magic lantern.—**BUSY B.**

4535. **Reflex Camera.**—Can any one inform me about the Loman reflex camera, of which Messrs. Mawson and Swan are the London agents? Is it a very practical one? Is their high price with excellence of workmanship and lenses justified? Rapidity of the shutter? Are results good?—**GIULIO (Venice).**

4536. **Varnishing.**—Should a negative be varnished before retouching or afterwards?—**I. C. R.**

4537. **Borax Bath.**—What maker's paper is best suitable for the borax bath?—**I. C. R.**

4538. **Studio, Lighting of.**—A studio with roof thus A, lighted from the top on both sides only (no side light whatever). What sort of blinds should be used for the top lights, and does there require any at the sides?—**I. C. R.**

4539. **Cutting Mounts.**—Where can I obtain information on mount cutting? Can any one inform me how ovals are drawn for cutting out of mounts?—**SPIKE.**

4540. **Hand Camera.**—Can any brother amateur inform me where I can hire an automatic hand-camera for a few days?—**ROVER.**

4541. **Dark Tent.**—Can any one recommend me a small dark tent? Must be portable and inexpensive, no sink or fittings required.—**C. H. S.**

4542. **Ebonite Trays.**—Will any one kindly advise me name and address of largest manufactory of ebonite developing trays in England?—**CHARLES C. MACKLEY.**

## QUERIES UNANSWERED.

Feb. 13th.—Nos. 4500, 4503, 4505, 4509, 4510.  
" 20th.—Nos. 4512, 4514, 4517, 4519, 4520, 4521, 4522, 4523, 4524, 4525, 4526.

## ANSWERS.

4499. **Hand-Camera v. Camera and Tripod.**—Each is best for its particular work, but if you are going in for prize pictures don't expect to get your negatives by means of a hand-camera. By all means work one, but do not on that account give up your legged instrument. Would not advise a larger size than 5 by 4. The Kodaks, of course, are good, but, personally, I still prefer to use glass plates.—**THE SMITH.**

4501. **Kallitype.**—Am of opinion that the prints are more permanent than those on albumenised paper, the absence of hypos from the fixing bath being no inconsiderable item.—**THE SMITH.**

4504. **Exposure Note-Book.**—The only one I know of that is at all likely to give you the information is sold by Bridges, 15, South Charles Street, Baltimore.—**THE SMITH.**

4507. **Exposure.**—Give the portrait twelve seconds and the landscape three seconds, and you won't be very far out.—**THE SMITH.**

4508. **Flash Lamp.**—Quite possible. Write to Perken, Son, and Rayment, Hatton Garden.—**THE SMITH.**

4511. **Hydroquinone, Concentrated Formula Wanted.**—The following given in Wall's "Dictionary" may be of service to "Brown."

(1)			
Hydroquinone	...	...	£0 gr.
Metabisulphite of potash	...	...	100 "
Distilled water, to make	...	...	8 oz.
(2)			
Carbonate of soda	...	...	240 gr.
Carbonate of potash	...	...	240 "
Distilled water, to make	...	...	8 oz.

Developer:			
Solution No. 1	...	...	1 oz.
Solution No. 2	...	...	3 "
or,			
Hydroquinone	...	...	5 gr.
Sodium sulphite	...	...	10 "
Lime water	...	...	1 oz.

This, however, although a more portable form of developer, will only keep for a few weeks (three or four). Both give good results, but I would advise "Brown" to give the first a trial.—**WIZARD.**

4513. **Reblacking Diaphragms.**—Remove as much of the old blacking as possible with fine glass paper, warm the diaphragms till they can just be borne on the back of the hand, and immerse for ten seconds in a solution made by dissolving copper filings or wire in nitric acid diluted. Now heat them again over a clear flame and a fine dead black will be the result.—**WIZARD.**

4515. **Photographing on the Continent.**—No hindrances to photography in Belgium or Holland, except that the street children are more troublesome than in other countries. Police afford all facilities in Belgium. *Bruges* full of good subjects; to take tall tower of town hall ask leave to go to first-floor window of one of the cafés opposite, propriety is certain to be accommodating. For interiors of churches bribe sacristan; plenty of street loungers to carry apparatus. Innsbruck, and in Austria generally, no difficulties. Customs officials occasionally troublesome. Open everything you can safely; but they are beginning to know photographic apparatus now. Be careful at Trieste, which is close to frontier, so don't go near fortifications with camera. "Express" men in Austrian towns always ready to carry apparatus—payment by regular tariff. No difficulty in Austrian churches as a rule; it is the freest country in Europe next to England for the photographer. Beautiful country round Innsbruck. Riva, no hindrances; go to Arco from there, very picturesque. As to Switzerland, you can do anything you like in big towns; plates and chemicals procurable. I have not much experience of Italy. Customs officials inquisitive if they think apparatus is new; they are open to bribery. I have never heard of anybody being interfered with in photography, as is often the case in France especially, and sometimes near the frontier in Germany (e.g., Cologne). Strasburg is the only place in your list where I should refrain from freely using the camera, obviously dangerous, being frontier fortress. Ostend, Milan, Venice, and Zurich are on **AMATEUR PHOTOGRAPHER** list.—**C. S. COBB.**

4516. **Lens and Camera.**—Can strongly recommend you to get an Optimus R.R.; this is the finest all-round lens in the market. This with Underwood's Instanto camera makes a first-class set.—**W. A. JACKSON.**

4518. **Photographic Apparatus for India.**—See article in **AMATEUR PHOTOGRAPHER**, March 7th, 1890. Climate of Assam very damp, therefore necessary to have really well-made camera—all brass bound and well seasoned wood, say one of Watson's Premier pattern; his work can always be relied upon. Camera should have parallel bellows, double extension, all usual movements, but as simple and strong in construction as possible. In your case do not sacrifice anything to lightness, there is no necessity, portage is so cheap. Tripod, solid, three-fold, brass bound, rigid, and strong. Slides also brass bound, ordinary book pattern, six would be enough. I should not advise roll-holder, but take some film carriers, as films are very useful when travelling, though they doubtless do suffer from deterioration more than glass plates, particularly in damp climate.



Useless to say anything about exposure, must be learnt by experience. As to shutter, india-rubber, gutta-percha, etc., to be avoided. Take out such chemicals as you want to begin with; they can be procured in Calcutta, but at three times the cost, therefore I should advise a standing order with stores, a good dealer in England who could send you out what you required direct to Calcutta. Very difficult to keep sensitised papers in India, air-tight cases essential. As to plates, I found professionals almost always used Wratten and Wainwright's, so that you may conclude they are amongst the most satisfactory for tropical climates. As to developers, ammonia as an ingredient is to be avoided in hot weather; pyro and potash, or soda, or hydroquinone would be better. You should have all your goods packed for the voyage in tin-lined case, air tight, and keep them in it always when not actually in use. You will find natives skilful imitative carpenters capable of repairing damage to wood-work of camera, etc., but not in case of metal work. Take a good oil optical lantern, you will find it a great resource. Mawson's lantern plates, I hear, behave admirably in the similar climate of Singapore.—C. S. COBB

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING's post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**THISTLE.**—We know of no such accommodation to be had in London, but have inserted as a query.

**LEX.**—For the special purpose you require use the "Mawson" plate, develop with hydroquinone, their formula. Shall be very pleased to have a copy of the photograph named.

**ENGINEER.**—(1) Use the hot bath at a temperature of about 150 degs. (2) You will find the instrument very reliable. We will stir up the secretary of the society named. Glad to know that our three publications have been of the greatest benefit to you, and that they are, in fact, your teachers.

**F. T. CARTER.**—A servicable instrument.

**PUZZLED.**—We delayed answering your query till we had given the paper a fair trial, and we have kept freshly sensitised and commercial double and single albumenised and chloride emulsion paper wrapped up in the sample you sent, and can find no trace of any action. The reduction you noted, we think, must be ascribed to gaseous fumes of some kind.

**W. R.**—The exposure would be about half that required in England; it is advisable, however, to give as long as possible, otherwise the shadows are too dark and heavy. To obtain a head of 2½ in. you would have to get 5 ft. from sitter, for 3 in. head 4 ft., for 4½ in. head 3 ft. This is the largest head you can get with your lens, and even then you will get distortion. 3 in. is the largest you can use.

**A. H. WILLOUGHBY.**—We should advise you to get No. 2; we can recommend this instrument.

**LEO (Norwood).**—We prefer 9, and place in the following order—9, 1, 8, 6, 2, 7, 3, 4, 5, 10.

**W. MARSHALL.**—If you calculate everything out as grains you will not be far out.

**THE O'KELLY.**—Let it alone. You cannot remove the varnish. Copy the plate and use the resulting negative.

**T. G. WALMSLEY.**—The print would be eligible.

**SHILLELAGH.**—The liquid glue can be bought at an oil-man's, or possible, ironmonger's.

**C. S. COBB.**—We have letters too, and are convinced as to the position taken up being the right one. Many thanks for the answers.

**J. H. CHAMBERLAIN.**—(1) The photographs are exceedingly picturesque, but, owing to their having been taken in such strong sunlight, the shadows in many cases are too deep. (2) Buy either a large size "Eclipse" or No. 5 "Kodak," both splendid instruments. (3) Quite possible with either of the above. (4) Should be very glad of such an article.

**THOS. BARNES.**—Write to the secretary of the Liverpool Amateur Photographic Association, 3, Lord Street. We have not the gentleman's address.

**F. M.**—Your letter raises no point. Write to the makers.

**J. A. SINCLAIR.**—The slide was not broken by us, but owing to careless handling when exhibited.

**THE THAMP ABOARD.**—We do not reply because you send us no name or address.

**CYMO.**—A toy, and as such reliable.

**S. S. S.**—Write to the maker about the camera. The apparatus sold by the firm are admirable.

**NIPKEX.**—They are both good lenses. You must make your own selection; such a question has no place in our columns.

**MINSTER.**—In lenses, the following order—1, 3, 5, 4, 2; plates—4, 1, 6, 5, 3, 2.

**J. GOSAR.**—Certainly not up to competition work. You must study selection of subject, exposure, printing, and toning. Buy "Experimental Photography" (Leaper, 1s), and order the "A. P. Annual" (1s., see advertisement). The prints are useless.

**F. O. BARTON.**—The negative is over-exposed; about three seconds would have been correct. It is correctly developed, and your proportions seem to be about right, though we should use rather less of all the constituents of developer. We should advise you to get "Development," by Lyonel Clark, just published by our publishers, price 1s.

**CHAS. H. COX.**—We will write you by post.

**NIGER.**—The plate has been returned to you; we doubt very much whether the design on it is obtained by photography at all; it certainly is not collodion, and not gelatine. We fancy it is some sort of spirit varnish transfer. There should be no difficulty in making the carbon tissue adhere. You give us no hint what you want to do ultimately. Can you prepare the plate as in photogravure without damage to the final result? Try the special transparency tissue and use a safe edge of tinfoil ½ or ¾ in. wide, on the negative. Write us again, and we will give you further help if desired.

**H. WIDDOWS.**—The advantage of backing plates is to prevent halation, that is, to prevent the sky encroaching on branches and other prominent objects from becoming misty and indistinct. There is no advantage in using backed plates for portraiture. (1) Backing makes no difference to the exposure. (2) Get some black needle paper and smear it over with a mixture of equal parts of glycerine and water, and squeegee into contact with the back of the plate. (3) See above. (4) Yes, the slides are good. Always pleased to help you.

**C. F. S.**—Look again at your table of solubilities. Ours says '5, not 5. Caustic potash is soluble in half its weight of water.

**T. HALL.**—The exposure should be (1) about 1 second, (2) 3 seconds.

**J. ROBINSON.**—You cannot do better than get No. 2 lantern; for plates, we prefer B special. Hydroquinone is a good developer. Always pleased to help you.

**C. H. L.**—We never name apparatus in this column. If you send us a stamped directed envelope we will reply by post.

**GRONO.**—Put the negatives in a dish and cover them with methylated spirit, and allow them to remain about twenty minutes, and then take out singly and rub with a tuft of cotton wool and place in fresh spirit, and rub till quite clear of varnish, then dry. You had better get some old negatives and practice varnishing; it is by no means difficult, or we can give you a formula for varnish to be used cold.

**R. W. SHARLAND.**—All the sets will be criticised in "Holiday Work," which will appear in about a month. Sets will be returned soon. A. Point of view good, but over-exposed. B. Very poor in everything. C. Over-exposed. D. An inch off foreground would improve this. E. Fair, fully exposed. F. Under-exposed. G. Under-exposed an inch off foreground would not hurt this. I. Out an inch off this too. K. Bad. You are inclined to over-expose and undevelop, and are also printing in the sun, which does not conduce to good results. The stains are due to prints overlapping in some cases, in others to dirt of some kind. We do not know the authors address, but will find out, and send any communication you forward to him.

**LINDUM.**—Fabre's "Traité Encyclopédique" is published in twenty parts at 2s. per part. Rider's "Handbuch," in forty parts at 1s. each. We should prefer the latter. Our publishers can obtain them for you. The plates can be had from almost any large dealer in London. The instrument will give good but small results. The print enclosed is better than your last, but the lines in the background spoil it. Always avoid these if you can.

**ICONOCLAST II.**—(1) We do not think you could make a picture from this negative. (2) It might be improved in bromide with ¾ inch off foreground. (3) Insufficient washing before toning is most probably the cause.

**WHEELER AND CO.**—Have advised purchase.

**W. GOODWIN.**—Letter duly noted.

**J. M. DICKENS.**—The corrections will be made as suggested.

**R. FROST.**—Will refer to the matter next week. We rather think that the insurers have been effected in the same office.

**W. J. CLEAR.**—For the veriest beginner, buy "Amateur Photography" (T. C. Hepworth, 1s.), our publishers will send it by post on receipt of We are sending you specimen copy of this journal.

**W. H. WHITTARD.**—We should advise No. 2. We shall require the photographs. One of the conditions are that the prize photographs become our property. About a fortnight or three weeks.

**COM. E. A. PRICE, R.N.**—Will write you upon the subject of your letter.

**MISS BROUGHTON.**—Duly received the Facile camera and your advertisement, which will be inserted.

**MARTIN J. HARDING.**—Letter noted.

**CHARLES C. MACKLEY.**—We cannot help you, but insert as a query.

**G. BRITAIN.**—Our publishers will send on binding cases. Two slides only have to be entered for competition. Those you are using are excellent. No. try any good brand of gelatino-chloride paper and squeegee on to ground-glass. It is better mountant than starch.

## Quarterly Examinations in Photography.

### QUESTIONS.

19. Describe the production of a transparency by the carbon process.
20. What is the action of light upon a film of gelatine impregnated with bichromate of potash? And what is the action of the exposed film towards water and fatty ink?
21. Is there any difference between photographing a landscape and a reproduction of the same in oil colours? Explain your answer.

(Latest Day for Answers—March 9th.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
2. All answers must be preceded by the question, and should be written on one side of the paper only.
3. A *nom de plume* may be used, but in every case the full name and address must also be given.
4. Answers must not exceed 250 words, unless otherwise stated by the examiners.
5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

"Amateur Photographer," bound, complete from beginning; what offers cash? — Rector, Elm, Frome.

AMATEUR PHOTOGRAPHER, vols. viii. to xii.; price 10s., or exchange. — Smith, 23, Manor Park Road, East Finchley, Middlesex.

AMATEUR PHOTOGRAPHER, from No. 1 to present date, less nine odd numbers; 15s.—Steel, 65, Springdale Road, Stoke Newington, N.

Bicycle.—Safety bicycle, ball bearings to all parts, including pedals, well plated and enamelled, in perfect order everywhere, adjustable to any size rider, easy running and pretty pattern, with lamp and all accessories; cost £11; price £7; bargain.—H. Baker, 2, Acre Lane, Brixton, S.W.

Cameras, etc.—Instantograph, half-plate, new pattern, complete, four double slides (wood), view-finder, also Gem pneumatic shutter, in thorough order, with canvas case; price 84s.; on approval; deposit system.—Bate, Milton, Gillingham.

Lancaster's quarter-plate 1890 Instantograph, every possible movement, as good as new, with tri-



# The AMATEUR PHOTOGRAPHER

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FRIDAY, MARCH 6, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

OUR VIEWS.—AMATEUR PHOTOGRAPHER Monthly Competition "Snow and Hoar Frost"—The Federation of London Societies—Admission to the Meetings of the Photographic Society—The Decimal System in Board Schools—The Sportsman's Exhibition—A Society Wanted for Wiltshire—Lifting a House at Lincoln—A *Swing Front* Wanted for Hand-cameras—The Liverpool Camera Club—Wanted a Companion on a Tour in Normandy—Exhibition at New York—The "Seven Ages of Man"—The Wesley Centenary—A Society for a Suburb of Edinburgh—Exhibition at Croydon—Lantern Show at Dundee—Royal Scottish Society of Painters in Water Colours—Royal Society of Painter-Etchers—The Jubilee Meeting of the Chemical Society.

LEADER.—Photography in Colours.

LETTERS.—Photography in Colours—Celerotype (Blackie)—Magnesium Chloride as a Fixing Agent (Wall)—Coloured Lantern Slides (Green)—Phot. Soc. for Liberation (Stuart).

ORIGINAL ARTICLES.—Instantaneous Photography (Harrison)—Studies in Art for Photographers (Lambert)—Photographic References (Nott).

EXHIBITIONS.—Liverpool International—Royal Scottish Society of Painters in Water Colours.

NOTES.—Edinburgh: The Photographic Society—The Society's Dinner—Dundee and East of Scotland—Lecture by Rev. D. M. Ross.

SOCIETIES' MEETINGS.—Federation of London and Suburban Societies—Barrow-in-Furness—Birmingham—Brighton—Croydon—Darlington—Dukinfield—Guildford—Hackney—Harrogate—Huddersfield—Isle of Thanet—Keighley—Lancaster—Leith—Liverpool—Peterborough—Pudsey—Richmond—Shoreditch—Shropshire—Photographic Society—Toynbee—West London—Woolwich.

We have the pleasure to give the following as the awards for the AMATEUR PHOTOGRAPHER Monthly Competition No. 22, "Snow and Hoar Frost."

*First Prize (Silver Medal).*

THOMAS MANSELL, L.D.S. . . . Birkenhead,

for a very beautiful study of "A Bright Winter's Morning, Bidston." This picture will be reproduced in the *Photographic Reporter* as a frontispiece. It was taken with an Aptus R.R. lens,  $f/22$ , and Mawson backed plate,  $1\frac{1}{2}$  seconds exposure in bright sunlight on December 21st, between twelve and one o'clock.

*Second Prize (Bronze Medal).*

HENRY IRVING . . . . . Darwen.

This competitor sends a photograph taken at the "Foot of Aber Fall, North Wales," in February last. The picture has more the appearance of an Alpine view, and is a splendid specimen of snow scenery. A Lancaster's Rectigraph lens was used,  $f/18$ , two seconds exposure being given to an Ilford ordinary plate, in shade, with clear sky. The print is on Obernetter paper.

Other contributions deserving of special note are "All on a Frosty Morning," contributed by the Rev. W. L. Groves,

taken on an Ilford rapid white label plate with a Ross R.S. lens working at  $f/22$ , with 12 seconds exposure. The photograph is a good study of hoar frost. Mrs. E. A. Cleasby can only enter in competition for the Silver Medal, she having been awarded our Bronze Medal; the photograph she contributes is very original, and is entitled "A Study in Black and White," rooks in the snow. Mrs. Cleasby says: "The rooks were about 18 ft. from the camera, which was concealed as much as possible inside a room with window open." The birds are capital, of course, in silhouette. A Swift's Paragon long-focus lens, 22 inch focus, was used, and an instantaneous exposure of an Edwards Isochromatic plate, given with a Furnell's shutter on January 19th, at 3.45 p.m., in bright diffused light. Another photograph, "A Christmas Visitor," by Mr. E. B. Wain, is a very fair picture; and a "Winter Scene," by Mr. W. Heath, is well chosen. "In Bolney Woods," by the Rev. R. C. Macleod, is a good study of hoar frost.

IN another column we refer to the meeting held on Monday evening, at the call of Mr. L. M. Biden, in the rooms of the parent society, with reference to the federation of the London Photographic Societies. There were representatives from a very considerable number of the societies, and a very successful meeting was held. Those present were unanimous with regard to the need of federation, and we congratulate Mr. Biden upon having at the outset received such hearty and encouraging support. It is not for us to point out the work to be done, but those who are interested to know our views might with advantage glance through the propositions we laid before the Camera Club Conference last year, especially with reference to exhibitions, a work which the federation might, we should think, take up. The continued growth of photographic societies needs such an organisation as Mr. Biden has sketched out. To maintain the members' interest in their society, the aid of competent lecturers and demonstrators is much needed, and we feel sure that if the federation could only arrange to secure the services of competent men who would for a reasonable fee lecture or demonstrate before photographic societies, much benefit would accrue to the members, photography would be advanced, and the apathy which now too often exists would in a great measure be removed. It will be interesting to know what support the larger societies will give to the movement. One thing is certain that if anything is to be done in regard to securing a reduction in railway fares for photographers it is imperative that a central society be formed. The President of the West London Photographic



Society, Mr. W. A. Brown, spoke hopefully of the support given by the societies in signing the memorial which will shortly be submitted to the Directors of the London and suburban railway companies. Another meeting will be called at an early date, and there is every likelihood of the federation getting to work before the season commences.

WE are very pleased to notice that the Council of the Photographic Society of Great Britain now admit those interested in photography to their technical meetings upon presentation of visiting card, a concession which many of our subscribers will much appreciate. The society's rooms are now at 50, Great Russell Street, W.C., and the Secretary, Mr. H. A. Lawrance, will, we are sure, willingly give particulars of forthcoming meetings.

THOSE interested in the decimal system will be pleased to know that the Education Department of the School Board has issued the following instructions:—

"The scholars in Standards 5, 6, and 7 should know the principles of the metric system, and be able to explain the advantages to be gained from uniformity in the method of forming multiples and sub-multiples of the unit. As a preparation for this, it will be useful to give in Standard 4 elementary lessons on the notation of decimal fractions."

THE tenth annual Sportsman's Exhibition in connection with the thirty-fifth show of the Kennel Club will be opened at the Agricultural Hall on April the 6th, and will continue open until the 11th.

It has been represented to us that the county of Wiltshire is exceptionally rich in subjects for camera men, and that at the present time there is no photographic society in the county. Perhaps some of our readers would send us their views as to the desirability of forming a society. Trowbridge has been suggested as a good centre, but we should be glad of any suggestions.

MR. J. S. B. JACKSON and Mr. J. T. Birkbeck, both of Lincoln, have sent us photographs of the lifting of a house in Lincoln. The building was raised three inches on the first day, on the next eight inches, then sixteen, and so on. The weight of the house is calculated at 200 tons, and the furniture remains *in situ*. No less than seventy-three powerful screw-jacks were used. Mr. Birkbeck's photographs are quite a curiosity, and show the arrangement of jacks, etc., admirably. A set of lantern slides and a brief description would cause some surprise and prove very interesting.

A CORRESPONDENT writes:—

"It seems a great pity that some of our bright, inventive minds have not contrived for us a hand-camera with a *swing front*, to answer the purpose of a swing-back in ordinary work. At present, especially where one carries a light walking-stick tripod, one is restricted to objects on a dead level with the lens, for if the objective be raised upward, all the perpendiculars converge, and no one wishes to see a church tower masquerading as a sugar loaf. If the front swung on a gimbal—the centre of which aligned with the sensitive film—the fixed focus would be preserved, and one could take a house, church, or, indeed, any object, no matter how high or low—a consummation devoutly to be wished."

MR. W. TANSLEY, of 14, Wentworth Street, Liverpool, advises us that "The Liverpool Camera Club will hold its ordinary meetings in the rooms of the Liverpool College, Shaw Street, on the second Wednesday evening in each month at eight o'clock." We know nothing of this club; the foregoing is the first communication we have received.

Mr. Tansley will no doubt be pleased to give further particulars,

AN assistant master of a first-class school writes us:—

"I am contemplating making a tour in Normandy for about three weeks from the middle of April, staying two or three days at the more important towns, as Lisieux, Rouen, etc., and should be glad to find a gentleman who would care to join me. Could you assist me by putting me in communication with any photographer who proposes making the same tour? The expense should not be very great. I have found one could do very comfortably in Brittany on about 7 f. a day."

We shall be pleased to place any subscribers who may be desirous of visiting Normandy in communication with our correspondent, who, we may add, is an M.A. of Oxford.

WE are asked to state that the Fourth Annual Exhibition of the joint American photographic societies will be held, under the auspices of the Society of Amateur Photographers of New York, from May 25th to June 6th. The exhibition is open to all photographers, American and foreign. No charge for wall space is made to foreign exhibitors; their exhibits must be sent by mail, *unmounted*, and must reach New York on or before May 1st, addressed to the "Committee of Arrangements," 113, West 38th Street, New York, U.S.A.

THE special competition, "The Seven Ages of Man," has proved a failure, and has also proved to us that such competitions are outside the scope of ordinary photography. We have only received two competitions, and shall award both a Bronze Medal. The first to come to hand was received from—

A. C. EVANS .. .. Alijarh, India, N.W.P., and is of a most novel character. We will not enter upon a description of the pictures this week, as in our next issue we shall reproduce Mr. Evans' photographs. The other competitor's work—

MR. F. S. JAMES .. .. Bideford, will also be described. There are several of them very meritorious, but they lack the originality and freshness of the pictures contributed by Mr. Evans.

THE Wesley Centenary prompts us to call attention to the fact that Messrs. York and Son, of 87, Lancaster Road, have an admirable set of slides for the optical lantern, "Scenes from the Life of John Wesley," with a lecture, illustrated by sixty slides, which at the present time would be of interest to many.

IN our correspondence columns we publish a letter setting out the desirability of forming a photographic society at Liberton, a suburb of Edinburgh. Our correspondent speaks strongly upon the benefit of such a society. Perhaps those of our readers who are of the same opinion will communicate with him.

THE Council of the Croydon Camera Club announce an Exhibition of Photographs and Apparatus to be held at the Braithwaite Hall, Croydon, on the 31st of March and the 1st and 2nd of April. Several prizes are offered. The photographs will, we believe, be restricted to members' work. The club has shown great energy, and not a week passes but new members are elected.

LAST week a lantern exhibition was given at Dundee under the auspices of the Dundee and East of Scotland Photographic Association, the lecturer being the Rev. D.



M. Ross, who is well known in Scotland, not only as an able lecturer, but as a most enthusiastic worker in photography.



THE "private views" at both the exhibitions of the Royal Scottish Society of Painters in Water Colours and the Royal Society of Painter-Etchers attracted gatherings of a "fine confused" nature, like Sydney Smith's definition of sheep's head. At the former exhibition, Art was represented by Mr. David Murray, A.R.A., who was congratulated on his exhibits; Mr. Frank Dicksee, A.R.A.; Sir Arthur Clay, whose picture "The Court of Criminal Appeal" has received so many compliments; Mr. W. Lockhart, R.S.A., whose Jubilee picture has just been published; and many other artists. Medicine had its masters in the person of Sir Wm. Jenner and Sir Spencer Wells. The Law sent representatives in Mr. Justice Lindley and Sir J. Simon; and among others whom we noticed were Lady Greville, Lady Crichton-Browne, the Hon. Mrs. Lowther, and Lady FitzWygram.

Some of the above were also present at the Royal Society of Painter-Etchers, where the absence of the President, Mr. F. Seymour Haden, was a subject of regret. Mr. E. A. Waterlow, A.R.A., rubbed shoulders with Mr. Leonard Courtney, M.P., who is generally seen at "private views," when Parliamentary duties permit. Here also we saw Sir Peter Lumsden enjoying the arts of peace in lieu of the arts of war, Viscount and Lady Lymington, Lady Loder, Lady Smyth, Lady Lawes, Mr. Chas. Eastlake, and others. Everybody seemed satisfied with the excellent specimens on view.

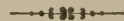


THE Chemical Society held its jubilee meeting and soirée on Tuesday, 24th ult., the meeting being held in the Theatre of the London University, the soirée at Goldsmiths' Hall. At the meeting, Mr. Warrington, the son of the first Secretary of the Society, presented an album containing the original letters and seventy-four portraits in platinotype of the founders of the Society. Sir William Grove, who is a veteran amongst the Fellows, had not caught the note on the permanency of the portraits, and he said that photographs could be perfectly and permanently preserved by soaking them in mastic varnish, which gets into the photograph and protects the silver. At the soirée Sir John Herschel's first attempts at photography were shown by Prof. A. S. Herschel, and the following is the description in Sir John Herschel's MS. journal of chemical experiments: "Having precipitated muriate of silver in a very delicately divided state from water very slightly muriated, it was allowed to settle on a glass plate; after forty-eight hours it had formed a film thin enough to bear drawing off the water very slowly by a syphon and drying. Having dried it, I found that it was very little affected by light, but by washing with weak nitrate of silver and drying it, it became highly sensible. In this state I took a camera picture of the telescope on it. Hyposulphite of soda then poured cautiously down washes away the muriate of silver, and leaves a beautiful delicate film of silver representing the picture. If then the other side of the glass be smoked and black varnished, the effect is much resembling daguerreotype, being dark on white as in nature, and also right and left as in nature, as if on polished silver." Besides this interesting exhibit, Warren de la Rue's first attempts at lunar photography were shown, and also a collection of photographs showing the action of the fluorescent rays of solution of quinine, which when used as an ink is quite invisible visually, but is reproduced by the sensitive salts of silver as black.

WE note that the members of the Holborn Camera Club are going to hold an exhibition and give a Cinderella dance at Auderton's Hotel, Fleet Street, on Saturday next.



THE annual dinner held by the members of the Croydon Camera Club is to be held at the "Greyhound" on the 9th inst.



### PHOTOGRAPHY IN COLOURS.

WE are enabled to give our readers further details of M. Lippmann's method of working, and also a diagram showing the disposition of the apparatus, and the explanation of the action of the mirror, etc., which are taken from an excellent article by M. Ch. Gravier, in the *Bulletin du Photo-Club de Paris*, a new magazine of great promise and of excellent appearance and get-up. The source of the light can, of course, be the sun in summer, but M. Lippmann used a Cance electric lamp of 800 candle-power A (fig. 1), the light of which is condensed by the lens B, and passes through the aperture of a screen C, then through the converging lens D, which renders the rays parallel, and through the prism E, where it is split up into its constituent rays, which pass on to the cell G, which contains a solution which cuts off all rays but those which are for the moment desired to affect the sensitive plate. The rays then pass through the objective H, and traverse the camera I, and strike on the sensitive surface contained in the cell K filled with mercury. The cell K is shown in fig. 2, in section and front view, and consists of a wooden box *b*, the front face of which is cut out and replaced by a sheet of glass G (fig. 2) on the interior surface of which is the sensitive film; the back of the cell is also a sheet of glass *d*, but may be of any other material. The two sheets of glass are held in close contact with the box *b* by four clips *pppp*, which prevent the escape of any of the mercury used. To photograph a window or any other coloured object the screen and prism are removed.

The sensitive film used by M. Lippmann is the collodio-albumen process according to Tuapenot's method; the developer is carbonate of ammonia with a little pyrogallie; and the fixing bath a 15 per cent. solution of hypo. The exposure required for the various spectrum colours varies, as one would naturally suppose, that for the blue being from twenty to thirty seconds, five or ten minutes for the green, and one hour for the red. The cell G (fig. 1), which acts as a light filter, is filled with certain solutions which are chosen according to the ray which it is desired to allow to act, and the solutions are tested spectroscopically in this respect; thus a solution of helianthin is used to cut off all but the red and yellow rays, a concentrated solution of bichromate of potash to allow the green rays to act, and the same solution diluted to allow the blue rays to act and cut off the violet.

As we have already seen, M. Lippmann depends upon the principle of interference, and the following is the explanation of fig. 3, and this phenomenon in this particular instance: Let us indicate the direction of a horizontal ray of light which will act on the sensitive film by the broken line, and the undulatory movement is indicated by the continued curved line, indicating a series of luminous waves of the length, *l* for the violet ray (*rayon violet*), and *L* for the red ray (*rayon rouge*).\* By looking at the diagram we shall see that a luminous ray after having passed through the sensitive film is arrested and reflected by the mercury, as a sound wave is arrested by the bottom of a pipe; let us in-

\* We must presume that our readers are sufficiently acquainted with elementary optics to require no explanation of these terms.—  
ED. AM: PHOT;

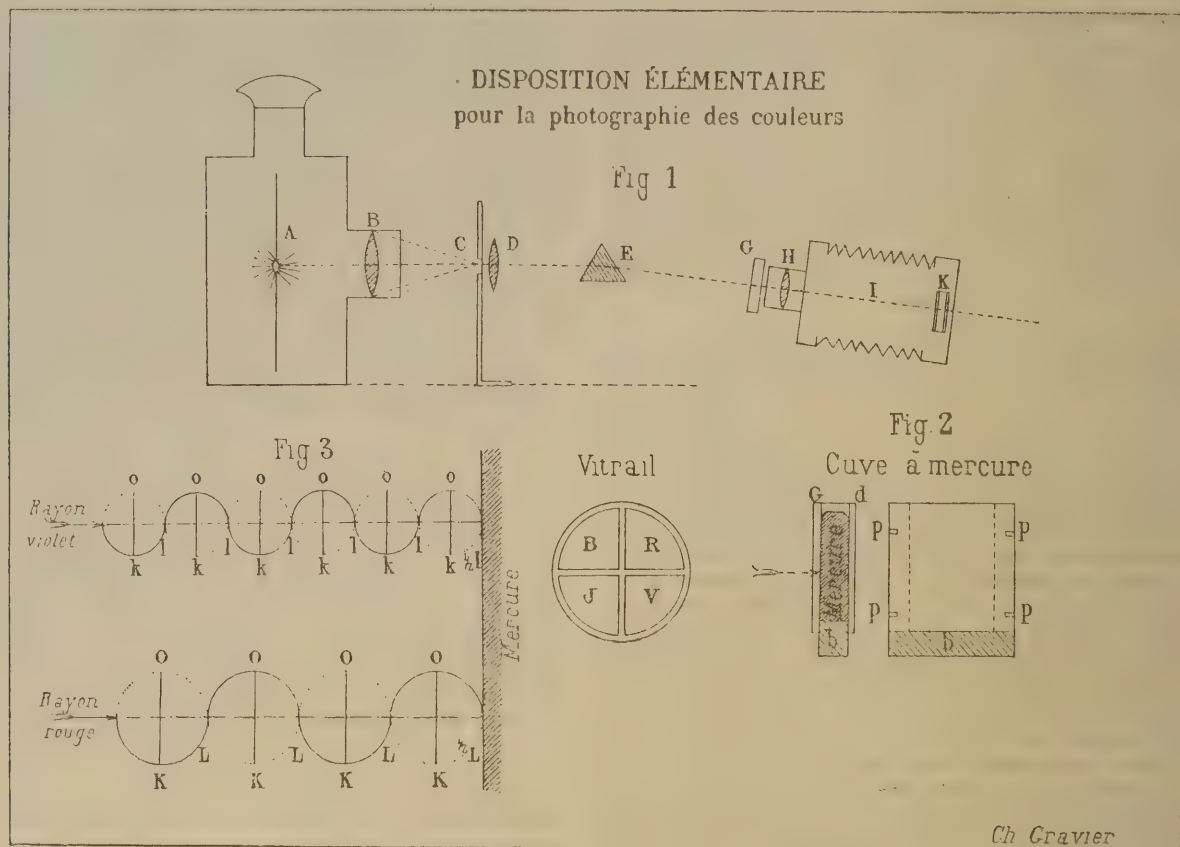


dicates the return of the reflected ray by the dotted curved line, and we shall see that it will cross the path of the first ray at certain points, and that the length of the wave will be reduced by half; we have here then interference, and at the points at which the curves cross each other, which are termed in acoustics nodal points, the effect should be darkness or nothing. The work resulting in interference should then be done by the troughs of the curves. If one represents the photographic work by a series of planes vertical to the centres of the curvature of the waves, it is easy to see that for a given distance the number of these planes should be a great many more for the violet than the red ray. The wave lengths for each coloured ray are given in optical or physical treatises; the number of these planes should be then in inverse ratio to the wave lengths.

It has been proved that the iridescent colours of mother-of-pearl and of soap bubbles are due to the superposition of minute films, which produce the phenomena of interference. M. Lippmann inferred that if it was possible to obtain in

a silver plate, or by a highly-polished metal plate, one might be able to colour a transparent and sensitive film, and which could be stripped after the impression of light, and one might be able to utilise this process practically. If by isochromatic sensitisers one could be able to obtain coloured impressions with relative values equal to those of the human retina, one may be able to obtain portraits by energetic developers.

The above is the gist of the article by M. Ch. Gravier, and it is sufficiently complete to require but very little addition; but it will perhaps be as well to point out that the enormous increase of exposure for red compared with that for blue, although a great objection, may not be an insuperable obstacle, as by the method hinted at in the concluding lines of M. Gravier's article, that is by the use of suitable orthochromatising substances, we may be able to so increase the sensitiveness to red and decrease the sensitiveness to blue as to render the relative exposures practically the same.



an homogeneous medium a superposition by photographic processes, there should be a colouration. Experience has proved the correctness of the perspicacity of this scientist; according to the coloured ray, he has obtained a superposition of films of silver which, just as proved by Foucault are transparent, and are separated by films of the vehicle (albumen, collodion, or gelatine) in which the salt of silver had been distributed. Mr. Lippmann has calculated that for a thickness of .20 of a millimetre the number of films of silver is 250 for the violet, 225 for the green, 200 for the yellow, and 166 for the red. The diagram (fig. 3) shows, considerably magnified, the disposition of the films, *o k* for the violet ray, and *O K* for the red ray.

To resume, we may say that a grand step has been made, from a scientific point of view, towards the obtaining of colours by photography. By replacing the mercury by

## Letters to the Editor.

### PHOTOGRAPHY IN COLOURS.

SIR,—Mr. G. Lacy's letter in your issue of last week, p. 148, calls, I think, for some reply, and although, like Mr. Lacy, I am no scientist, I must endeavour to give my views upon this question, and shall proceed with his letter seriatim, as I have made the subject of colour one of my studies.

We must all of us admit that "colour has no objective existence as colour," and also the truth of the whole of this paragraph, bar the last sentence, and I will ask Mr. Lacy one question, why does a bull hate bright red?

The learned professor, M. Lippmann and his apologists, do not claim that any inorganic substance receives "identical impressions to those of some given human eye," what they claim, as I understand it, is that some "philosophical inorganic substance" can so reflect certain of the constituent rays of heterogeneous white



light as to cause the impact of the remaining rays on our retina to give rise to what we call colour. "The parallelism between lengths of colour rays and thicknesses in layers of silver salt" is this, I take it. Supposing we take a vessel of pure water; the light transmitted through this, and reflected from its surface will be white, but if we add a spoonful or two of milk to it, what is the result? Why, the reflected light is no longer white, but white tinged with blue, the transmitted ray is yellow. Now let us add more milk, and the reflected light becomes bluer still, the transmitted light a deeper-toned yellow; and if we add more milk still, the transmitted ray becomes orange, then orange-red, then red, and finally disappears altogether. This, I take it, is what M. Lippmann has endeavoured to do; he has endeavoured to so precipitate his chemical and philosophical organic substance in varying and increasing layers that the particles of silver shall be able to so affect white light as to be able to extinguish or "interfere" with certain rays, that the remaining rays may give rise to the sensorial impressions we call colour. Mr. Lacy might learn something from a study, both theoretical and practical, of the phenomena of interference, and he would learn that there is a parallelism between the thickness of the interference-causing substance and the colours it gives; but an explanation of this is almost beyond my powers, and certainly beyond the limits of a letter. I'm not a "scientific bigwig," and I don't want to smash Mr. Lacy, but there are always two sides to a question. Perhaps he'll kindly smash me now.—Yours truly,

FARBENLEHRE.

\* \* \* \*

## CELEROTYPE.

SIR,—I beg to call attention to an error in one of your paragraphs under the heading of "Our Views." You state that Mr. Schölzig's "new gelatino-chloride emulsion paper differs from others in the market, as it is supplied in a white tint." Now, I have to claim for the Blackfriars Photographic and Sensitising Company, that we are the first and only firm who have ever, commercially, manufactured a successful gelatino-chloride emulsion paper in England, and, moreover, that I produced and placed on the market a white paper before Dr. Jacoby's was advertised in this country.—Yours truly,

WM. GOURLIE BLACKIE

(Manager to the Blackfriars Photographic and Sensitising Company).

\* \* \* \*

## MAGNESIUM CHLORIDE AS A FIXING AGENT.

SIR,—I have received a letter from Herr R. E. Liesegang on the above subject, a translation of which I append:—

"With reference to your article, *AMATEUR PHOTOGRAPHER*, p. 161, on fixing with magnesium chloride, I must make the following remarks to you. I made the first statement in *Photographisches Archiv*, 1890, p. 76. I there wrote: When I placed a few drops of a dilute solution of chloride of magnesium on gelatino-chloride of silver and allowed it to soak in, I noticed on exposure that the places coated with this remained white . . . The way in which magnesium chloride acts is, moreover, entirely different to that of the chlorides of sodium, potassium, and ammonium. The latter only fix, indeed, in that the chloride of silver dissolves in excess of the alkaline chloride, that thus the undecomposed chloride of silver goes out of the paper into the liquid. With my experiments with magnesium chloride could this naturally not be the case, since I allowed the same to soak into the film. The process has been generally falsely taken up, and therefore the statement in translation into other journals misrepresented Miethe himself, who gave a particular formula, used the salt as a fixing agent. He remarks on this property it is no better and no worse than other soluble chlorides, and has also no advantage over these.

"Later I remarked on this misunderstanding (*Photo. Archiv*, 90, p. 150): 'I explicitly pointed out that the chloride of silver is not removed in this process by washing.'

"I arrived at a new method of fixing by this means. The silver salt should no longer be removed from the picture, but merely made insensitive. One can attain this by certain chlorides. Thus Rose already found (Emelius, 'Handb. Chem.,' vol. iii, p. 615) that chloride of silver which had been precipitated with mercuric chloride, or only contained a trace of this salt, did not become coloured by light. The chlorides of the alkalis and alkaline earths are not sufficient, however, and I recalled the earlier statement as untrue. I found that 'the places coated with this (magnesium

chloride solution) were not thoroughly fixed, but became coloured somewhat blueish after a long time in light.' (*Photo. Archiv*, 1890, p. 151). On the other hand, prints which had been toned and fixed in a mixture of bromide of potassium, bromide of sodium, or bromide of cadmium and chloride of gold, and which have lain eight months in the light, remained quite unaltered. (The tone is warm brown and the gelatine is not hygroscopic). For fixing heliochromes (prints in natural colours), this method proved to be unsuitable as that by dissolving the silver salt. Whether it in the present form can take the place of hyposulphite of soda in ordinary is questionable; for if the permanency towards light is also perhaps the same, there is still the fact that the print contains silver salts against that formed of pure metal, a disadvantage against other chemical actions."

This letter clearly proves that Herr Liesegang has also recognized the facts as stated in my article, and this will be, I trust, sufficient to decently bury chloride of magnesium as a fixing agent.—Yours truly,

E. J. WALL.

\* \* \* \*

## COLOURED LANTERN-SLIDES.

SIR,—In a recent issue I notice that Mr. T. Perkins, M.A., in writing upon lantern-slides, says that there is a great prejudice among many people to visit lantern shows, giving as his reason that there are so many slides shown at exhibitions which are coloured. Also saying that in his eyes a coloured lantern-slide is an abomination, much resembling washes of water-colour over a wood-cut or line engraving.

Either your correspondent has never seen a properly coloured lantern-slide or does not understand what he is writing about. With regard to the colouring, I perfectly agree with Mr. Perkins that a great many so-called coloured lantern-slides are an abomination, but what can anyone expect for 1s. 6d. retail? Is it at all possible that a photograph of Christ Feeding the Five Thousand can be coloured and sold as a work of art for 1s. 6d.? Possibly Mr. Perkins has never seen a first-class lantern exhibition, such as that of Professor Malden, Messrs. W. R. May, Edward Ash, etc., etc., and if that is so I should strongly advise him to do so on the first possible opportunity.

In the meantime I forward to you three moderately-painted specimens of lantern slides, hoping that after you have seen them you will send them on to Mr. Perkins for his inspection; these are not my best quality, but a moderately cheap commercial article, which can be obtained at any respectable optician's.

My reason for troubling you is that such statements as Mr. Perkins makes are likely to prejudice and mislead would-be purchasers of coloured lantern-slides, thereby injuring opticians and the profession to which I belong.—Yours truly,

JOHN GREEN

(Ten years dissolving-view artist to the late Royal Polytechnic).

\* \* \* \*

## PHOTOGRAPHIC SOCIETY FOR LIBERTON, N.B.

SIR,—As a constant reader of your journal, I have been much impressed with the development of photography during the last few years, and the consequent formation of societies throughout the kingdom, and those who have been mainly instrumental in establishing them have to thank the *AMATEUR PHOTOGRAPHER* for services rendered in seconding their efforts, and in the present case I request your usual goodwill and advocacy. Liberton is a suburb of Edinburgh, surrounded by much fine scenery, and having in its neighbourhood many historic buildings, such as Craigmillar Castle, the well-known Dovecot Tower, the old parish church, Duddingston Church and Loch, with its fleet of graceful swans, the Braid Burn and Hermitage Glen, the Powburn, etc. It is no wonder it has been the hunting-ground of the camera men, and the place which owns many devoted workers. The nearest photographic society to us is the one which holds its meetings once a month in the centre of Edinburgh, and besides the distance for us to reach it, it is composed of a mixed class, professional and amateur, which, I think, is not quite the thing, as one feels small when among our big brethren, so we intend to have amateurs only in our society, and the rules to be drawn out will ensure that none but such will be eligible for membership. I ask the favour of the insertion of this communication in your journal, as I believe it will then be brought under the notice of other than those in the immediate locality, who might be willing to cast in their lot with us.—I am, etc.,

JOHN STUART.

Tower Villa, Liberton, N.B.



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XII.

#### HOW SENSITIVE PLATES AND FILMS FOR INSTANTANEOUS WORK ARE PREPARED.

WE have now described the three parts—the Support, the Sensitive Material, and the Adhesive—which together constitute the surface, or layer, upon which the image formed by the camera-lens is received, and by which it is retained. We must next briefly state how these three things are put together, that is, how dry-plates and films are made.

The objection may be raised, "Oh! nobody makes his own plates nowadays!" Well, to begin with, this statement is not quite correct. There are still good workers who prefer to be independent, and to be *certain* of the perfection and quality of their tools—for the dry-plate is the photographer's chief implement. Many, too, who know something of chemistry and physics find a keen pleasure in plate-making and in the study of the problems which it involves, believing, as the late Colonel Russell used to say, that "photography would be a most interesting subject *were it not for the pictures*!"

But there is another reason why every photographer should *understand* the manufacture of the sensitive gelatine dry-plates which he uses. Clever as our plate-makers are, and good as their plates usually are, it is impossible but that inferior or even bad plates should not unfrequently be placed upon the market. The ignorant worker will not be able to properly appreciate either the bad or the good points of a plate. Sometimes he will blame the plates for his own mistakes, and sometimes the case will be *vice versa*. It has long been recognised that every mistress of a household—be she a duchess—should know how to cook. For though she may seldom or never require to practise the art, yet she can discriminately give neither praise nor blame to her servants unless she is practically acquainted with their work. Now the plate-maker is the photographer's cook, and very careful cooking is required to produce a gelatine emulsion which shall satisfy the fastidious and educated taste of the "shadow-snatchers" of the present day.

Again, it is not likely that we have reached finality even in the preparation of photographic dry-plates. But those who wish to advance photography—and nearly all the great advances in this direction have had their origin in the brains of men working as amateurs at the subject because they loved it—will not be content until they have mastered every practical detail. For it is only by such mastery that the power to make still further advances is to be obtained.

*Object of Emulsion-making.*—The thing to be aimed at in emulsion-making is to obtain *pure* silver bromide in particles of the one eight-thousandth of an inch in diameter, embedded in a thin level coating of *pure* gelatine upon a glass plate or a film of celluloid. The particles of silver bromide must be present in such numbers that when the coated plate is held between the eye and the flame from an ordinary gas-burner (at a distance of about a foot from the latter) the outline or shape of the flame shall *not* be distinguishable.

*How Silver Bromide is Made.*—The compound of silver and bromine which forms the mainstay of modern photography is produced by mixing together solutions of silver nitrate and ammonium bromide. Immediately this is done the two chemicals "change partners," so to speak, and produce silver bromide and ammonium nitrate. The last-named substance is soluble in water, and is washed away. The silver bromide is then mixed with gelatine, and poured

upon the "support"—glass or celluloid—which is to sustain it within the camera.

*How Silver Bromide Particles of the Right Size are Obtained.*—It is not sufficient for our purpose merely to obtain "silver bromide;" we wish to secure that form or molecular modification of this substance which is most sensitive to light.

When the silver bromide is first formed each particle is *extremely* small—only the twenty-thousandth part of an inch or so in diameter. It then transmits ruby light. But these particles can be made to grow in size, and they then transmit blue light. When the particles of the silver salt are about the eight-thousandth part of an inch in diameter, they are then most sensitive to light.

There are two methods by which molecules of the right size are best obtained—

(1) *Sensitiveness Obtained by Boiling the Silver Bromide.*—The silver bromide is slightly soluble in the solution of ammonium bromide plus gelatine, which forms part of every gelatine emulsion. But, under the influence of heat, this dissolved silver bromide settles down upon the undissolved particles of the same salt, thus increasing their size. It is usually found that after boiling the emulsion for about forty minutes, the silver bromide particles have attained the right size—about the eight-thousandth of an inch in diameter—and this is tested by examining a drop of the emulsion under a microscope, and by observing if the colour of the light transmitted by the emulsion has changed from ruby to blue. This method of obtaining sensitiveness by heat is due, as we have already shown, to the labours of Bennett and Mansfield in 1878-9.

(2) *Increased Sensitiveness obtained by Adding Ammonia to the Silver Bromide.*—Ammonia possesses the power of dissolving silver bromide. When this alkali is added to the emulsion of silver bromide in gelatine it dissolves some of the silver salt. By gentle heat the ammonia can be driven off, and the dissolved silver bromide then settles upon the particles of silver bromide which have not been dissolved, and increases their size. This "ammonia method" was discovered by the Belgian chemist, Dr. D. Van Monckhoven, in 1879.

The gradual growth of the silver bromide particles (with the consequent increase in sensitiveness) obtained by either of the two methods now described, is known as the "ripening" of the emulsion. It is easy to carry matters too far, and to overdo this ripening; the silver bromide then suffers chemical decomposition, and the emulsion is spoiled.

(To be continued.)

**A Durable Hydroquinone Developer.**—Dr. O. Lohse, in a contribution to the "Photographisches Almanach," gives the results of his experiments upon the possibility of using resorcin in conjunction with hydroquinone, and he recommends the following as the most suitable formula:—

Hydroquinone	...	...	...	...	7.5 grammes.
Resorcin	...	...	...	...	0.4 "
Sodium sulphite	...	...	...	...	30.0 "
" carbonate	...	...	...	...	20.0 "
Distilled water	...	...	...	...	1,000 cc.m.

**Xyol.**—M. R. L. Delprier gives, in *Les Annales Photographiques*, the following formula for this new developer, which has given him satisfactory results:—After having dissolved the xyol in 60 c.c. of distilled water, prepare a solution of caustic soda at 2½ per cent. First plunge the negative in the xyol from two to four minutes, according to the rapidity of the exposure, then take it out and place it in the soda solution, agitating the dish. The print immediately shows itself, and even a weak negative is quickly strengthened, when treated by this process. Xyol not being liable to change, may be used until the liquid is exhausted; the soda should be rejected after two or three plates have been developed.



## Studies in Art for Photographers.

By REV. F. C. LAMBERT, M.A.

### CHAPTER IV.

#### BREADTH, UNITY, SIMPLICITY.

AMONG the many and various terms used by artists, the word *breadth* occurs very frequently. The expression is used to convey the idea of grouping together patches of light, half light, and dark, in such a way as to avoid anything like spottiness.

The following experiment is worth making. Cut up a dozen or more bits of paper of each of the following tints: light grey, dark grey, black. Let each bit be of somewhat different (irregular) shape to the rest, say, roughly speaking, about the size of a postage stamp, or somewhat larger. Now, with your three or four dozen paper scraps and a large sheet of white paper, try and build up in a rough form any object you may have before you as a copy, *e.g.*, a tree, a head, a house, using your pieces "edge to edge." As a matter of course, there will be places where you get a *bad fit*, *i.e.*, where the white paper shows through the small spaces, wherever the pieces do not quite fit. Look at your rough patch sketch (mosaic) from a distance, and with eyes a little closed, so as to soften somewhat the outlines. Observe the *patchy* effect of the white ground cropping up, and that it is more offensive in the darker than in the lighter parts.

Now add to your stock of paper scraps a similar lot cut from white paper. Repeat your experiment, this time using a ground work of a tint somewhere between your light and dark grey tints. You will at once observe that the patchy effect is not so offensive as when using a white ground.

Now, readjust your paper scraps by moving them up towards each other, so that they just overlap without letting any of the ground (background tint) show through, except in large and continuous patches. Repeat the experiment with the white paper ground.

You will doubtless have observed that *small* spottiness, patchiness, or streakiness is highly offensive, and gives the notion of disconnection of the various parts; while the opposite quality, breadth, simplicity, massing of similar tints, conveys the feeling of largeness, harmony, continuity.

Turn to nature for a moment and compare the effect of a leaf-clad tree against the sky, with a similar tree against a hill side. Observe, again, the varying effect of the direction of light in both instances.

It can scarcely be said that we *always* have breadth in nature; but it may safely be affirmed that there is much more breadth in nature than we should be led to suppose had we only the so-called works of art whereupon to form our opinion. With equal safety may it be affirmed that this quality which we call breadth, if not essential in every work of fine art, is at least wrongly absent in a very large majority of cases.

Careful examination of a mountain range, in weather which has just a *suspicion* of slight fog or haze, shows the effect of the gradual softening of edges, and blending of small masses, as hill after hill recedes into a soft blue-grey band against the sky. Again, everyone knows how greatly the judgment of distances is influenced by the varying effect of atmosphere. Hence a due regard to the expression of breadth in proper proportion is of the greatest assistance in conveying the feeling of distance, and the indescribable consciousness of the open air which is found in all true and good landscape work.

It is often said that breadth is opposed to detail, and

*vice versa*. This is far from being the case, as one may very easily see by performing the very simple experiment of photographing an appropriate scene, say a hillside, bank of trees, group of buildings, etc., from various points of view, so as to get different lightings, but always using the same lens, stop, etc. We may thus have practically the same degree of detail under various schemes of lighting, *i.e.*, varying degrees of breadth.

It must, however, be observed that by the judicious use of lens and stop very various results may be obtained which in some respects are analogous to the mental effect produced by breadth.

The most desirable state of things requires a thoughtful selection of time of day, exposure, lens, stop, and also propitious atmospheric conditions; so that, without destroying detail to the degree of irritating fuzziness, there may be expressed all the detail which the mind requires—visible on concentrated examination, but never making its presence obtrusively felt in the slightest degree.

The great power of simplicity of arrangement of masses, and the feeling of the open air and expanse of nature, is frequently to be observed in the rolling masses of storm clouds. Glorious pictures may be seen in cloudland before or after a sudden storm. In such studies one may well see the power of breadth and also *unity*.

The word *unity*, like balance, is variously applied. For instance, to the theme (*i.e.*, the component elements, parts, figures), and in a very similar sense the terms *consistency* and *fitness* are also applied. The word *unity* is also at times used in place of *continuity* of the relative planes. So that the parts of the picture are not only consistent one with the other, but also that they join one to the other, so that, as one writer expresses it, "you can imagine yourself walking about the picture without the fear of stepping into some chasm or abyss."

Again, unity is sometimes used to express what another writer has appropriately called the *law of principality*; which is again called the *principle of subordination*. By these expressions it is meant that in the composition not only the component parts belong to each other, but also that there is some one part to which all the others are subordinate, and that among the subordinate parts there is some sort of relative order of importance or pictorial merit.

Thus it will be seen that these terms, *breadth* and *unity*, are incapable of being crisply defined, seeing that they overlap each other in meaning; for instance, breadth is necessary for the due expression of unity.

Again, both balance of line and also of light and shade are generally necessary for satisfactory expression of breadth and also of unity.

Once again, the great law of *simplicity* lies at the root of all three; seeing that the feeling of complexity, or of self-assertive design, is opposed to each of these three fundamental qualities.

Hence the greatest art is always strong in its simplicity.



**Articles on Photo-Micrography** (Answer to "Microscope")—Mr. Pringle writes: "Your questions will, so far as possible, be answered in a private letter; the replies would take up too much space in these columns."

**A Paste which will Stick Anything.**—Take 2 oz. of clear gum arabic, 1½ oz. of fine starch, and ½ oz. of white sugar. Dissolve the gum arabic in as much water as the laundress would use for the quantity of starch indicated. Mix the starch and sugar with the mucilage. Then cook the mixture in a vessel suspended in boiling water until the starch becomes clear. The cement should be as thick as tar, and kept so. It can be kept from spoiling by the addition of camphor or a little oil of cloves.



## Photographic References.

By MAJOR J. FORTUNÉ NOTT.

(Continued from page 134.)

### DEVELOPMENT.

FOLLOWING the correct order of procedure towards the production of a negative, we have now arrived at the stage when the services of the camera are no longer necessary, and the last and crucial operation known as development is all that is requisite for the completion of this important step in the creation of a photograph.

It is hardly necessary to state that the work of developing has to be done in the dark-room, but it may be as well to mention the fact that until this place is reached the greatest care should be taken of the dark slides that contain the exposed plates, for any white light, even of the faintest kind, that may penetrate through the slides will work havoc with the brilliancy of the plates during the operation we are now about to describe. It is not wise to place too much dependence on the good qualities of the workmanship which the dark slides exhibit, for accidents will often happen even with the most careful workers, and the weather can affect the wood so as to render the backs anything but light-tight in the strictest sense; hence as a little precaution against contingencies of this nature occurring may save considerable disappointment and annoyance, it is well to give the matter some attention. A photographer of considerable experience who habitually produces negatives remarkable for their brightness and clearness, informed the writer that the only secret of insuring such results—all other things, of course, being correct—lay in the care displayed in protecting the plate-holders as much as possible from daylight during every operation in which they had to be handled. He had satisfied himself regarding this point by experimenting. His apparatus was as perfect as a first-class manufacturer could supply, and he had no fault to find with it, but still he noticed there was a marked difference in the "pluck" of negatives resulting from the two methods of procedure. One plate holder he kept well covered, and, moreover, wrapped the camera around with the focussing cloth during the exposures. With the other he took no such precautions, but trusted to the good workmanship of his appliances, with the result that it confirmed him in the opinion that the greatest care should be exercised, especially in bright light. The subtle character of that change which light creates in the nature of the sensitive emulsion can be exerted apparently through wood when it is as thin as that frequently employed for the shutters of camera backs. The effect does not quite amount to what is generally recognised as "fog," but there is a perceptible dulness or absence of that quality known among photographers as "sparkle;" in fact, there is a certain degradation, which is easily discerned by the skilled worker, and by many amateurs is, no doubt, often attributed to some defective quality in the plates themselves. As habits, good or bad, can be acquired from the very start, the tyro in photography should remember that small or apparently minor matters, such as the careful wrapping up of dark slides, and other little precautions to which we have endeavoured to draw attention, can exert a great influence on the character of the work he produces. The results of negligent methods of procedure only become evident during the operation known as development, consequently there does not exist any remedy for the evils produced by carelessness.

The exact nature of the change that is created by the light striking upon the sensitive emulsion with which the

plate is coated has never been ascertained. Several opinions have been expressed and conjectures hazarded, but it still remains a mystery for science to solve. With this phase of the question we have no concern at present. For the photographer's purpose it suffices to know that a change has taken place, and that, after the plate has been exposed in the manner before-described, by the employment of certain simple chemicals the image which has been impressed upon the plate, but is nevertheless latent, or not visible, can be brought out and fixed, in a manner that renders it unalterable by the further action of light. As this image is the reverse of the one which has ultimately to be produced in order to get a correct photograph, it is known as the negative, and the latter production as the positive. That is to say, in the negative, the parts which will print white are black, and the black parts or shadows are white. It is very necessary to bear this in mind, and to be able to quickly discern the gradations between the two extremes; for this information is required in the dark-room to prevent under or over development. As experience is gained, and if the utility of the knowledge is appreciated, the photographer can soon acquire the power of critically examining a negative, and of knowing just what character of print it will make. In fact, it will be impossible for him to produce a satisfactory negative, except by a fluke, unless he thoroughly understands the class of work which he should endeavour to create, and then what changes or method of procedure are necessary in order to fulfil his object.

Regarding the negative: no amount of written description can convey any practical information respecting its good or bad qualities which can be of any service to the beginner; he must in some way get a few object lessons by examining some specimens of the article themselves and the prints that result from their use. He will, if he has any critical faculties and is quick to discern distinctions, find that some negatives have the image represented in too thin or transparent a manner, a fault resulting from over-exposure or under-development; others are the reverse, too dense or hard, so that the light cannot act through them in printing, with the consequence that the photographs are all black and white, with no gradation or half-tone. This fault is the result of under-exposure or bad development in the sense that the ingredients employed in mixing the developer have not been correctly gauged to suit the needs of the subject or the exposure which has been given to it. Again, the colour of the negative will be found to materially affect its printing qualities. This colour generally results from the nature of the developer employed. It is often useful to know how to get any colour necessary, for different tints have such influence on the prints that it is sometimes convenient to avail oneself of the power which it confers. A very pretty looking negative, which in the eyes of the inexperienced may look like a sample of perfection, is not always a good negative; it is very easy to be deceived upon this point. The proof of the pudding is in the eating, and the proof of the negative is in the printing, although this statement must be qualified to this extent, that the printing process must be decided upon when the plate is being developed, for every process requires for any near approach to perfection, a special character of, negative. Upon this subject we hope to have some remarks to make at a later stage of this series of articles.

Before entering upon the description of the procedure to be adopted in developing plates or films, we consider it advisable to sound a note of warning cautioning the beginner against a certain class of photographer who will try to impress him with the idea that it is a purely mechanical process, calling for no particular skill beyond that required in mixing certain chemicals and in regulating the quanti-



ties that have to be applied to the plates. In every stage of photographic work, skill, knowledge, care, and patience are absolutely essential—in the developing-room, perhaps more than anywhere else, for here the photographer can exert more control over his work than is possible at any other of the various operations required for the production of a photograph.

(To be continued.)

## Federation of London and Suburban Societies.

THE meeting held at the rooms of the Photographic Society of Great Britain on Monday night to consider the desirability of forming an association or federation of the London and suburban photographic societies was fairly well attended, but, as was naturally to be expected, several of the gentlemen present, though sent as representatives by their societies, were sent to hear rather than to speak. The consequence was that there was not very much talking, but good business was done. The chair was occupied by Mr. Lewis M. Biden, President of the Toynbee Camera Club, who is the originator of the project, and who has displayed much energy in the matter up to the present point. The Chairman briefly sketched his idea of the objects of such an association as he had in his mind, the main object, of course, being mutual help and support. It often happened that in the smaller societies most of the members were beginners, and the more advanced members could not give up every evening to assist and teach them, and frequently the secretary had considerable difficulty in drawing up the syllabus for the season, and there were numbers of meetings at which no business was done. On the other hand, some of the advanced members would be perfectly willing to spend hours on the preparation of a paper and experiments if they knew that its benefit would not be confined to one society. One of the objects of the Federation would then be to secure the names of such readers as were willing to re-read their papers before other societies. Then again the Federation could support the West London Society in its laudable endeavour to secure cheap railway fares for photographers on pleasure bent, and the Federation would have much more weight with the railway companies than one society could possibly have. Then there was the question of lantern slides. Many members made a number of slides which were shown once and then put aside and forgotten. This was a great pity. The Federation might take a note of those slides, and then when a series illustrating any special place was required it could be found, and so the time and trouble spent on the slides would not be wasted. Then there was the question of approaching the Photographic Society of Great Britain, with a view to its admitting the societies as corporate members of its body at a fee of, say, £1 ls. each society.

Mr. W. A. Brown, Chairman of the West London Photographic Society, said he should be disposed to join a federation if the larger societies would join; if they did not do so, it would be useless for the smaller societies to form a federation. The exchange of lectures and lantern slides would manifestly be a great help to the societies. The joining of the Photographic Society of Great Britain would also be a great advantage to the societies, as it would enable any member to attend the lectures and meetings of the parent society.

The Chairman said there would have to be some limit to the rights of members of societies as members of the parent society.

Mr. Brown pointed out that the West London Society was not the originator of the cheap railway fares, but had taken it up after it had been once dropped. Federation meant some expense, and the societies would want to know what they would be expected to pay.

The Chairman said he had given a little thought to that point, and he had the idea, perhaps five per cent. on the gross income of the Society, with perhaps a reduction to the larger societies. He had answers from good numbers of societies, and not one of them was unfavourable.

Mr. Deane said some years ago a society applied to the railway companies for cheap fares, and practically they were offered second-class tickets for third-class fares.

Mr. Cherry, of the North Middlesex Society, asked whether federation meant affiliation or absorption in one great society?

The Chairman said it meant affiliation; each society would manage its own affairs in its own way. The Federation would have certain meetings at which delegates from the societies would meet and make their wants known and the General Secretary would take notice of them.

After some further conversation,

Mr. C. W. Hastings suggested that the sense of the meeting should be taken on the main question, and that then the societies would have something tangible to consider before the next meeting. A movement to secure a reduction in railway fares was mooted in the columns of the AMATEUR PHOTOGRAPHER in 1885, but had fallen through, probably because there was then no organisation and far fewer societies.

It was then unanimously resolved:

1. That it is desirable to form an association or federation of societies and clubs whose members are interested in photography.
2. That the London and suburban societies be requested each to send two delegates to make the necessary arrangements to settle the name and draw up the constitution of the proposed association, and to fix the terms of membership, etc., the delegates to have power to appoint a Committee for this purpose, such delegates to continue to act for a period not exceeding six months from the launching of the Association.
3. That the delegates take into consideration the following objects, first—
  - (a) The interchange of lectures, papers, lantern slides, etc.
  - (b) The obtaining the reduction of railway fares to photographers on their outings, either singly or in parties.
  - (c) The admission of the various societies joining the Federation as corporate members of the Photographic Society of Great Britain.
  - (d) Generally to promote photographic knowledge and research.
4. That the delegates be requested to prepare a list of honorary lecturers who, when disengaged, will, without charge or fee, lecture, read papers, give demonstrations and lantern evenings before other societies, and to make rules in connection with the expenses and otherwise.

In reply to Mr. Brown,

The Chairman said that at first the Federation would be of the London and suburban societies; the committee would decide if those limits should be extended.

Mr. Sturmev said he did not think they would get the provincial societies to join at first; besides, by confining it as proposed, they might get the whole of the London and suburban societies, and be a united body as far as they went.

Some discussion took place as to whether the Photographic Society of Great Britain would be likely to join the Association, but the general opinion seemed to be that for the present they must be content with the continuance of that body, which might join when it saw what the Federation was going to do.

The proceedings terminated with votes of thanks to the Photographic Society of Great Britain for the use of the room, and to Mr. Biden for presiding and for his action in the matter.

**More indiarubber** will be dissolved by adding 5 to 15 per cent. of oil of eucalyptus to the benzol or carbon bisulphide used; in the latter proportions, the mixture of carbon bisulphide will dissolve nearly 20 per cent. of indiarubber.—*Pharm. Centralblatt.*

**Photographic Apparatus for India.**—Mr. J. W. Boothman writes:—"I feel deeply indebted to your correspondent, Mr. C. S. Cobb, for his very exhaustive reply to my query, for which I beg to tender him my sincere thanks, and, if I am not trespassing on your space too much, I should here like to record my appreciation of the courtesy and the eagerness to be of assistance shown by many of our more widely-learned photographic confières, through the columns of the AMATEUR PHOTOGRAPHER. It speaks volumes, I think, for our fascinating art science, to find its students ever ready to impart the knowledge they possess to those less favoured than themselves, and I feel myself to be particularly fortunate in having elicited a reply from an artist whose descriptive articles of foreign scenes and experience have been of the greatest interest to many thousands besides."



## Our Contemporaries.

The *American Journal of Photography*, speaking on the question of "Focussing," says—"In conversing with a friend lately, upon the subject of throwing a portion of the view out of focus, he expressed an idea which is certainly very true, namely, that in looking at a scene in nature we have everywhere the details before us in all their perfection, but we only see them at the particular point which is claiming our attention for the moment, and the case is much the same in looking at a photograph. Let the detail be good all over, and the eyes will find satisfaction at whatever particular point they may look for it, without being disturbed by that which surrounds. We hope that it will be clearly understood that what we have written is solely in relation to landscape scenes."

The *Lithographic Art Journal* speaks of a new substance "hyaline," which is likely to be utilised in photography. It is "a 'horny, translucent, plastic composition of great tensile strength and considerable elasticity, which may be used as a cheap and inodorous substitute for celluloid, and can be worked, dyed, pressed, denitrated, and rendered incombustible or fireproof.' 'Hyaline' is a mixture of about equal parts of gun-cotton and colophony, or shellac, damar, turpentine, or of any mixture of these resins."

*Wilson's Photographic Magazine*, talking of "Progress," says—"But we must confront the fact that there are many men so enamoured of their own work as to believe that they cannot do better. The stupidity of such a belief is altogether inexcusable, but we will waive the discussion of that just now, and point out in what direction there is hope, even for them, in the matter of obtaining better prices for their work. Let them, each after his own fashion, get out a new style of photograph, individualised by some peculiarity of pose, lighting, or finish, and introduce it with their regular work at a higher rate. To our mind, the most sensible way of doing this is to adopt some special printing process for this high-grade work. The degree of admiration created in the public mind by photographs printed in other ways than by the too familiar albumen-paper process, is little understood and still less appreciated by many photographers. Put this hint into practice during 1891, and note the effect." It also quotes the following new photographic process:—"Commence by washing a very plane copper plate with acetic acid, then with water. When dry, coat it with the following solution:

Tannin .. .. .	4 grammes.
Gallic acid .. .. .	2 "
Water .. .. .	500 "

The plate drained and dried is then coated with—

Distilled water .. .. .	1,000 grammes.
Gelatine .. .. .	100 "
Alcohol .. .. .	50 "
Bichromate of potassium .. .. .	10 "
Bichromate of ammonium .. .. .	10 "
White of egg .. .. .	10 c.c.
Pure glycerine .. .. .	10 drops.

After exposure, the plate is treated by a concentrated solution of sulphate of iron. A relief is then obtained, which is moulded with the following amalgam:

Bismuth .. .. .	4 parts.
Lead .. .. .	32 "
Tin .. .. .	32 "
Antimony .. .. .	8 "
Copper .. .. .	4 "
Mercury .. .. .	1 part."

The *English Mechanic* gives the following "Test Paper for Acid"—"Cut white filtering paper of neutral reaction in pieces of about 6 in. square, and impregnate them with tincture of curcuma (1 part curcuma, 7 parts alcohol, and 1 part water). Place the paper on threads to dry. When dry pass a sheet of it through a bath composed of 40 drops of liquor of potassæ and 100 c.c. water. Then immediately pass it through a bath of water (flat earthen dishes are convenient for the baths), and at once place it on a thread to dry. As soon as it is dry cut it in pieces and inclose them in tinfoil. The paper will not bear long exposure to light and air, but will keep well if inclosed in tinfoil. It is much more sensitive than litmus-paper, and will detect acid in a mixture of 1 part of hydrochloric acid in 150,000 parts of distilled water, and will detect carbonic acid in spring water. If the water

be boiled to expel carbonic acid, and a yellow colour is produced, some free acid (besides CO<sub>2</sub>) is shown to be present. The best way to use the paper is to touch it with a glass rod which has been wetted with the liquid to be tested. The paper can be freshly prepared in fifteen or twenty minutes."

The *Beacon* says—"With the average amateur, all is fish that comes to his net, and too frequently, and mainly in consequence thereof, his basket generally contains nothing but small fry. To pop away at the first thing that comes is excusable in the try of but a few months, while the novelty of producing a picture of any kind is sufficient inducement to persevere, and reward enough for the outlay in wasted plates; but as soon as that stage has passed, then 'learn to see,' which requires more patience and practice than many are aware of. Now, as this power of 'seeing' comes by practice, and as there are many branches in out-door work widely differing from each other, it will be evident that he who sticks to one will be more likely to master it than he who roams about from branch to branch like a bee from flower to flower, but, unlike the bee, makes no honey. In the early days of wet collodion we had a friend who was ever present at the weekly outings, and whose work was admired by all and envied by some of his fellows. We did not think of it then, but know it now; he had a craze for old bridges and water sluices, and there was not one or the other within a radius of fifty miles that he had not laid under contribution. He stuck to that class of work, had thought out every line that best could be made to tell; he was a specialist in fact, and hence his great success. There is no need to suggest the various branches into which out-door work may be divided; each should find out his own particular class for himself, guided both by inclination and circumstances; but the more limited the better. The mere mention of lake and river scenery, little picturesque nooks and corners, architecture, domestic, ecclesiastical and rural, rural occupations, marine subjects, genre studies, 'cloudland' in its various aspects, cattle, horses and animals generally, both domestic and wild, although but a few of the many branches, will show how wide is the choice; and we earnestly recommend all who wish to excel or make their mark in photography, to select some one of them and stick to it, and in that way help to bring about such a condition of matters that everyone's individuality will be recognised in his work; so that in looking over a miscellaneous collection of photographs we will be able to say, this is a Brown, this a Jones, and this a Robinson."

The *Photographic Herald and Sportsman*, in an article by Leslie Selby on "Clark's Platinum Toning," says—"I then put in three five by four aristotype prints, and of these, the first toned to a good black, the second to a chocolate brown, and the third would not go much beyond a red. Apparently they exhausted the baths I then washed them all in a bath of ammonia and water, and, fixed them in the usual way. When dry, the matt-surface prints were not altogether a success, not so much on account of the tone, but they appeared to be much wanting in vigour, which I put down to the negatives being unsuitable, but the tone of the aristotypes was better than any I have been able to get with a gold toning bath. The matt-surface prints lost a little of the tone in the fixing bath, but the aristotypes, on the contrary, seemed to go on toning for a short time, and dried a still better tone. This however, I fancy I have noticed with them in the ordinary platinum toning process. Altogether, I was quite satisfied with my experiment."

**A New Gold Salt.**—Herr Lainer, of the Vienna Institute of Photography, has introduced the following process for obtaining a stable and constant salt of gold, which can easily be prepared chemically pure and free from acid, which does not deliquesce or effloresce, and gives toning baths of constant and reliable action. One hundred parts of gold are dissolved in aqua regia, and hydrochloric acid added to the solution. To the solution of pure chloride of gold thus prepared, one adds 38 parts of chloride of potassium. The mixture thus obtained is carefully evaporated till crystallisation, when the dish or vessel is placed under a bell jar containing concentrated sulphuric acid or quick lime. The mother liquor is poured off, and this again evaporated and treated as above. The crystals thus obtained are dried under a bell jar, and heated to 100 to 110° C. to drive off the remaining traces of free hydrochloric acid. The salt thus procured forms yellow hexagonal needles, easily soluble in water, and of which 0.03 gramme or half grain, will tone a sheet of unenriched paper,



## Notes from the Edinburgh Centre.

(By our District Editor.)

THE members of the Edinburgh Photographic Society held the second of their popular evenings for this session on the evening of Wednesday, 24th ult., in Queen Street Hall, which was crowded. Mr. G. G. Mitchell presided, and in a few neat sentences introduced the business of the evening. This consisted of the passing through the lantern of about 160 slides, the work of twenty-two members during last season. The show was a most creditable one, both as to quality and variety. There were numerous views of foreign parts, chiefly Continental, with a few from places so far distant as Natal and Singapore. In two slides by Mr. J. McGlashen, the Treasurer of the Society, the difficult operation of combination printing had been performed with quite satisfactory results. Mr. T. Barclay, the Secretary, described the views in short terse sentences, which were never tedious, and Mr. J. M. Turnbull handled the lantern with the utmost satisfaction. Music was furnished at intervals, and altogether an exceedingly pleasant evening was spent.

As a sign of, it is to be hoped, returning vigour to the Edinburgh Photographic Society it may be stated that the Council have arranged for three outdoor meetings of members during the ensuing summer. This is a phase of photographic work which no society ought to neglect, and the surprise is that the gatherings of the Edinburgh Society, which at one time were so popular, should have been allowed to fall into desuetude. The Council deserve to be supported in their revival of this most pleasant of all outings. The first of the three events is to be on the afternoon of Saturday, 9th May, most probably to Inverkeithing; and the other two will be on the afternoons of Saturday, 6th June, and 4th July.

Another hopeful sign in the case of the Edinburgh Photographic Society is to be found in a resolution by the Council to offer for competition two medals for the best pictures produced from negatives taken during the current season, and the announcement that the President has intimated his intention to give another. The Council themselves put it that they "had under consideration the comparative falling off in the interest shown by members in the annual show of work," and that the medals are offered "with a view of stimulating this interest," so that the criticisms upon the Society which the AMATEUR PHOTOGRAPHER has been the medium of ventilating are tacitly admitted by the Council. It is announced that the conditions upon which the medals will be awarded have not been finally decided upon, and members are requested to furnish suggestions on the subject.

The festive gathering of which I wrote on the 13th ult. has been fixed to take place in Daish's Hotel, Edinburgh, on the evening of Friday, 6th inst. It is to be independent of all photographic bodies, and will be known simply as a "photographers' supper." Mr. Alexander Ayton, of North Bruntsfield Place, has taken a world of trouble in connection with it, and he is quite sanguine of its success. There used to be an annual feast in connection with the Edinburgh Society, but it, like several other good things, was allowed to die out within the past year or two.

On the same evening, if it be not considered outside of my district, I observe that the members of the Dundee and East of Scotland Photographic Association gave a lantern Exhibition in the Kinnaid Hall, Dundee, before a large audience. Lord Dean of Guild McGrady, who presided, said that the views to be given would be those of "Eastern Cities," and that the lecturer would be the Rev. D. M. Ross. Mr. Ross, he remarked, was a lecturer to whom it was a pleasure to listen, and that night he would describe to them many places which he had recently visited, and give them a lot of valuable information.—The scenes, which were of a high-class order, embraced places of interest in Egypt, Palestine, etc. Mr. Ross's remarks were of a racy and at times amusing character, and were brimful of information. In describing Jerusalem, he said it was one of the dirtiest places in Christendom, and beat Tindal's Wynd and Castle Court, in Dundee, hollow—a remark which drew forth great laughter. The following rather lively description of the meeting is given in the *Dundee Advertiser*, under the signature of "Deborah":—

The members of the East of Scotland Photographic Association and the Rev. D. M. Ross must surely have been delighted at the large company which assembled at the Kinnaid Hall last evening.

Although rime and fog had penetrated the heavy doors, and hung like a thin but quite perceptible mist over platform, area, and galleries, these by no means served as "dampers" to an expectant assemblage. After a pleasant organ recital by Mr. A. M. Stoodle, Mr. McGrady, accompanied by the lecturer, ascended the platform. Just a moment after, presto! the lights are out, and—as perfectly as though each of us possessed the famous wishing-cap—we are spirited away to other climes and scenes. The Rev. D. M. Ross is a clear and fluent speaker, and his enunciation so perfect that it is a pleasure to follow his voice; and with such a leader we could feel almost "at home" even under the shadow of the great Pyramids and the Sphinx. The last of these he introduced to us as "an old friend." Certainly she is "old," and the sight of her battered, noseless, and weather-beaten face—for Mahommedan and Turk have conspired to despoil her of her beauty—awoke a sense of pity as well as awe, "gazing right on with calm, eternal eyes amid all surrounding chance and change." It gives one a very strange feeling," the lecturer remarked, "to look upon the face of the Pharaoh, even although through a glass case, who had seen Moses." Even the photograph of the King stirred some strange thoughts, verily. "Not very beautiful" was the description of him given, having a Roman nose and teeth rather prominent. An irreverent person in my vicinity remarked "The Bogie Man" when his picture was projected on the screen.

Cairo with its mosques and minarets, its strangely-constructed houses and wooden windows, was very attractive, seeming to lie in the light of a warm sunshine. We of modern days would do away, on sanitary grounds, if on no other, with those heavily-blinded windows, which cannot be peered through even without difficulty. But they serve their purpose. As Mr. Ross explained, the wives of the harem may look out without the fear that outsiders will catch a glimpse of one fair face. We saw with interest also the two women grinding at the mill of which Christ's simple language has given so vivid a word picture. From Cairo, after showing us other scenes, the lecturer conducted us to Jerusalem. "Jerusalem is not a large city," he said; one can go round it in three-quarters of an hour," and quite involuntarily there rose to one's lips the words of the old Psalm—

Jerusalem as a city is  
Compactly built together.

But a new Jerusalem is springing up in its immediate neighbourhood. What sacred memories hang about the city! In it and about it

Walked those blessed feet  
Which eighteen hundred years ago were nailed  
For our advantage to the bitter cross.

And yet, and yet, despite dome-roofed houses, its vaulted streets, and olive gardens, "it is the dirtiest city in Christendom, and beats Tindal's Wynd and Castle Court hollow"—so said our lecturer. We paid a visit to the Temple and to the wailing place of the Jews, where that despised people every Friday assemble and chant their prayers for deliverance. The Church of the Holy Sepulchre, the Christian church at Jerusalem, is a splendid and beautiful edifice. Its exterior is fine, and within it has standing room, we were told, for 10,000 or 12,000 people. It was believed for a length of time to have been built on the scenes of the Crucifixion and Burial of Christ, but it has been proved that this cannot be the case. Nevertheless devout worshippers are still found who are eager to enter the tomb where the sacred body is said to have been laid, and to kiss the stone which was rolled in front of it, and pilgrims come from all parts of the world to offer their sacrifices of prayer and praise. The Pool of Siloam was—as Mr. Ross remarked—rather a disappointment. This is no "shady rill, where sweet the lily grows," but a dark, deep, rock-surrounded pool. Jacob's Well was more in accordance with preconceived ideas regarding it. It was not difficult to imagine at its edge the worn and weary teacher and the woman to whom He talked. Many other interesting scenes were visited, and valuable information given regarding them. We saw Russian pilgrims clad in fur while the thermometer showed eighty degrees in the shade; shops, too, gorgeous architecture, etc.

**Whatman's Paper in Germany.**—At a recent meeting of the Praktischer Photographen Berlius, Dr. Heseckel laid before the members some beautiful proofs on his new paper, which is Whatman's rough paper prepared for platinum toning. The results were much admired and created no little astonishment at the artistic results that could be obtained.

**Belfast Y.M.C.A.**—We have just received the prospectus of an exhibition to be held in Belfast from the 27th of April to the 1st of May. There are to be three sections: (1) Confined to members; (2) Confined to residents in Ireland; (3) Open to amateur and professional. In all, there are to be sixteen classes. Silver and bronze medals will be placed at the disposal of the Judges. Mr. J. H. Hamilton, of 14, Wellington Place, Belfast, will gladly give further particulars.



## Exhibitions.

### LIVERPOOL INTERNATIONAL EXHIBITION.

(By Our Special Correspondent.)

TUESDAY night being the last on which I could forward "copy" of the Liverpool show for the current issue of the AMATEUR PHOTOGRAPHER, I left my preliminary view of the exhibits over to the last minute. I have just left the Walker Art Gallery, and am writing these lines at top speed to catch the mail. Mr. T. S. Mayne and Mr. W. Tomkinson, with a staff of men, are still busy "hanging," and I believe there is no probability of their leaving the Gallery until after midnight. A Committee meeting in one of the "half-hung" rooms finished to-night at seven o'clock.

Certainly, the magnitude of the Exhibition strikes one the more one sees it and the more one knows about it. The latest proof of the catalogue received from the printer to-day shows that nearly nine hundred frames are disposed of so far as numbering, etc., are concerned. There yet remain upwards of six hundred frames to be similarly dealt with and got into order. Much the greater majority of the total collection are "hung," only two of the seven galleries not being exactly ship-shape. Of course, there remains some furnishing up to be done, and sundry alterations have to be made, but everything will be in the pink of condition for Friday next, the formal opening day.

I am told by the Secretary that the 1,500 and odd frames sent in embrace about 4,200 pictures, and besides these there are forty sets of lantern slides, in addition to novelties, apparatus, etc. The "hanging" and displaying of these have necessarily taken up a great deal of time. As a matter of fact, at the time of writing, the "hanging" has been going on for something over a week. The decorations—which are to be in blue and gold—are just commenced, and, so far as I could judge, will have a picturesque and pleasing effect. They are artistic and quite in harmony with the other surroundings of the show.

Of the photographic exhibits, those in the Champion Class are, without doubt, a surprisingly large and excellent collection. They cover about two-thirds of the wall space in one of the largest galleries, and all are splendidly "hung." In fact, the "hanging" all through the show has been both carefully and critically carried out. Among the studies in the Champion Class are pictures by Messrs. Marshall Wane, W. W. Winter, R. W. Robinson, R. Keene, Lyd Sawyer, W. J. Byrne, R. H. Lord, A. R. Dresser, J. L. Mackrell, C. Court Cole, etc., etc.

Mr. Wane's series embrace six framed portraits direct from life, 24 by 20 in., printed in platinum (gold medal, International Exhibition, 1890); six framed portraits, direct from life, 24 by 20 in., printed in platinum (bronze medal, Edinburgh Photo. Society Exhibition, 1891); architectural interiors, landscapes, and other studies, instantaneous (Royal Prussian State medal, 1889; medal of Photographic Society of Great Britain, 1889; Berlin Jubilee Exhibition, 1889; first prize gold medal, Cologne, 1889; first prize, Cologne, 1890).

Mr. W. J. Byrne's include Wilhelm Kristean Selle, Mus. Doc., (first medal, Pall Mall, 1890; first medal, Royal Cornwall Polytechnic, 1889; first medal, Royal Cornwall Polytechnic, 1890; first medal, Berlin Jubilee Exhibition, 1890).

Mr. Lyd Sawyer's, medals at Crystal Palace, 1888; World Competition, 1888; Crystal Palace, 1889; Richmond, 1889; Birmingham, 1889; York, 1889; Pall Mall, 1889; Tunbridge Wells, 1890; Coventry, 1889; Pall Mall, 1890; Keighley, 1890; Falmouth, 1890; Edinburgh, 1891.

Messrs. G. West and Sons—Calcutta, 1890; Paris, 1888; Ventnor, 1891; London, etc.

Mr. W. W. Winter's—York, Worcester, Kidderminster, Crystal Palace, Hartlepool, Cornwall, Keighley, etc.

And so on. Mr. Ralph W. Robinson's series of sixty-three "Artists at Home" is unique, and has an excellent position in the champion class room.

Portraiture is very finely represented in the several departments and makes a wonderfully good show. Landscapes, seascapes, marine and cloud studies, animals, instantaneous work, enlargements, and the rest I can merely note only. Taken all round, they are exceptionally creditable, and some of the pictures will prove sensations. Notably the exhibits from abroad show marked quality, and particularly those that I saw from Germany were *par excellence*. As for the mounting and general finish of the pictures in all departments, they are noticeably fine.

Of the lantern slides, which are to be put through the lantern and adjudicated upon to-morrow (Wednesday) night, I am in a position to say that they are a superb lot. The President is of opinion that they show some of the most correct work in this line that he has ever had to do with.

About thirty gentlemen have been invited to the dinner to the adjudicators which is to be given an hour or two before the opening of the exhibition next Friday. Following this function, at which the usual toasts will be proposed, the opening ceremony will take place at 8 o'clock, commencing with a *conversazione*, at which it is estimated some 2,500 guests will be present. An admirable selection of music has been arranged, to be conducted by one of our best local musicians. Indeed, neither time nor expense have been spared to send the show off with *ecclat*.

Concluding, I may point out that it will be of interest to visitors to the exhibition to read the introduction at the front of the catalogue. This has been written by the Secretary and is a terse history of the rise and progress of photography, a history, too, excellently well written and containing valuable hints.

### ROYAL SCOTTISH SOCIETY OF PAINTERS IN WATER COLOURS.

BY ONE WHO DOES NOT KNOW.

MORE than two hundred pictures—none of them too original—are now exhibited at Dowdeswell's.

Mr. Duncan Mackellar gives an accurate interior scene (9), but we might fairly take exception to the mantle-piece. In "The Edge of the Wood" (14), Mr. E. S. Calvert succeeds admirably, and Mr. R. Greenless is especially excellent with cloud effects in a view of "Ptarmagin Hill" (17). Close to "Pond Lilies" (18), on which Mr. S. Reid will be complimented, we caught sight of a village church. If this latter view were placed closer to Mr. Reid's picture, we might entitle the pair "Spires and Pond Lilies"! Mr. H. J. Dobson, depicts "The Frugal Meal" (25) in careful manner; there is not much "grace" before or after this meal. Hearty praise must be accorded to Mr. Robt. Little's "Firelight and Twilight" (28), where the reflection upon the young lady's face is wonderfully well painted. We must be careful—the young lady's face is *not* wonderfully well painted, and we intend no reflection upon her! Impressionism is dying, but dying hard, to judge from the melancholy examples in this Exhibition; *vide* Mr. A. Melville's view of "Henley" (35) at night. The Chinese lanterns are Pain-ful. In "Evening" (36), Mr. Bannatyne has given us a very careful treatment of clouds. This suggested to me a new title for a book—possibly the Editor would like me to write it for the AMATEUR PHOTOGRAPHER Library—"Clouds, and How to Treat Them, by a member of the Bar." Miss. J. Hunter Shield exhibits a pretty study, "Bluebottles" (40), which is, in reality, a vase of cornflowers. Save that the sky is too solidly treated, Mr. C. N. Woolnoth is happy in "Arran from West Kilbride" (44). This artist is also admirable in "The Needles" (46). An extremely awkward young lady figures in Mr. R. Little's "Minuet" (48). No striking originality is shown by Mr. W. Rattray in "Summer Sunshine" (52). We like Mr. J. Maculloch's "Portincape" (54) for its careful and artistic treatment, and Mr. C. B. Phillips, R.W.S., is good in "Strath Avon" (58). A delightful picture of "The Black Linn" (62) is shown by Mr. Waller H. Paton, R.S.A.; and Mr. Otto Leyde's "At Play" (64) is likewise good. The wild landscape in Mr. Mason Hunter's "Scottish Borderland" (69) lacks contrast, and in "Sunset on a Border Moor" (70) Mr. R. B. Nisbet narrowly misses a great success. Mr. Otto Leyde's "Along the Sands" (76) we commend to editors of illustrated magazines; it would make a very pretty coloured frontispiece. The detail in Mr. H. Maxwell's "On the River Nurnberg" (77) is very faithfully drawn, and the picture is good. Mr. G. S. Ferrier has chosen well the landscape he depicts in "Winter Landscape, Earlsdon" (84), and Mr. C. J. Lauder is very happy in his sketch of "Westminster" (85). Mr. J. Maculloch's "Island of Inchbhuidh" (90) is admirable. Mr. John Smart, R.S.A., R.B.A., exhibits a large but not very wonderful picture (113). Miss Shield is careful in "Grouse" (132), but it is really time such studies were excluded from picture exhibitions. Game of this sort is high, by this time, and should be appropriately "skied." Mr. J. R. Houston's "Home Lessons" (138) is another impressionistic study. The choice and care displayed by Mr. R. Greenless in "Glen Strae"



(142) deserve praise. Mr. J. G. Laing depicts "The After-Glow on the Hill" in very natural style. Surely, the bathos of impressionism is reached in Mr. Jas. Paterson's "The Mill" (152). Mr. Tom McEwan gives a fine portrait of an old woman in "Among the Prophets" (176) and a pretty little domestic subject in "Wandering Thoughts" (190). The new A.R.A., Mr. David Murray, sends an excellent view of "The Bridge" (183). Mr. T. Hamilton Crawford is happy in his sketch of the "Interior of St. Paul's" (184), where his perspective is admirable. Mr. R. W. Allan, A.R.W.S., who has been touring through India with Mr. W. S. Caine, succeeds well in "Venice" (192). Mr. Chas. Blatherwick's "Cornisk" (201) is excellent, and "A Forest Glade" (209) by Mrs. G. M. Greenlees deserves a compliment.



**Vogel on Lippmann's Discovery.**—Dr. H. W. Vogel, of Berlin, editor of *Photographische Mittheilungen*, No. 433, says, whilst speaking of Lippmann's discovery: "We note that this principle has already been accurately developed by Dr. Zeuker in his 'Photochromie' (1868), twenty-five years ago. . . . Wiener has proved by photographic experiment the correctness of Zeuker's assumptions, and now Lippmann, by following up the same, has obtained a remarkable result, even if he has only been able to photograph very bright objects, such as the spectrum, and a window lit by the electric light."

**Prouting's Combined Lawn Tent and Studio.**—This accessory to out-door photography has, we understand, been made more efficient than when offered to the public last season. It combines the fittings of a studio with the advantage of an admirable lawn tent. The maker says: "Without impairing rigidity, I have devised a system of jointed poles, and everything fits compactly into a neat wooden case with hinged lid, the outside measurement being about 5 ft. 6 in. by 9 in. by 5 in. The fittings are very complete and of good quality." There are many of our readers who do not "go in" for portraiture, who will gladly avail themselves of one of Mr. Prouting's "Lawn Tents and Studios." We believe they are supplied for £4 4s., and sent carriage paid to any station in the kingdom. Further particulars will be found in our advertising columns.

**Print Washing.**—A correspondent says:—"The apparatus I employ for print washing is of home-made manufacture, and from the work done with it I think it may be considered a success. The washing tank is a large round earthenware dish, about 24 in. diameter and 10 or 12 in. high, such a one as is used in chemical experiments, and known as 'a pneumatic trough.' Over the side of this I hang two or three pieces of bent glass tubing, each forming a syphon. The ends of syphons immersed in the trough are of different lengths, one almost touching the bottom and the others varying from that to about half the distance up the side. This arrangement I leave under the tap, and connect the trough with the tap by means of an india-rubber tube, at the bottom of which is a piece of glass tube to keep it straight. The end of this reaches about one-third way down the trough. The amount of water passed through varies with the number of prints to be washed; the greater the amount of water entering the trough, the more syphons are used to carry it off. To prevent prints floating over the top, I place pieces of smooth wood over the top near the edges, but if water pressure is constant, you can arrange the syphons to carry away just as much as enters the trough, and leave it working for hours without accident."

**The Phenomena of Interference Photographed.**—Now that considerable attention is being directed to this subject, it is interesting to note that an account of the photographing of the so-called Newton's Rings by MM. Baille and C. Féry, in the School of Physics and Chemistry of Paris, is given in *La Nature*, 1890, p. 333, illustrated by blocks, which show first of all the appearance of the spectrum when photographed on an ordinary and an isochromatic plate (Attout-Tailfer), and then the appearance of the usual rings obtained by the presence of air between a convex lens and plane surface. The arrangement of the lens and camera is plainly shown, and also the monochromatic lamp in which chloride of thallium was used instead of chloride of sodium, and the exposure was reduced thirty times, which perhaps might be expected, as the spectrum of sodium is the well-known D lines, and that of thallium a line in the yellowish green about D<sub>3</sub>E, a point where there is a maximum of sensitiveness for erythrosin plates. By measuring the diameter of the rings obtained in both cases, that is, with the soda and thallium flames, one can determine the relation of wave lengths of both sources of light. Baille and Féry found  $\frac{\lambda}{X} = 1.09$ , from which the wave length of the thallium flame can easily be reckoned: thus  $X = \frac{\lambda}{1.09} = \frac{589\mu}{1.09} = 540\mu$ , the actual wave length of the thallium light.

## Quarterly Examinations in Photography.

**Question 16.**—Give directions for sensitising albumenised paper.

**ANSWER.**—In buying albumenised paper the dealer will tell you what strength silver bath it requires, as it depends to a certain extent on the amount of chloride of ammonium used in albumenising the paper. The silver bath can be varied to suit different classes of negatives. With a dense negative a bath of 30 to 40 grs. to the ounce will be found sufficient; with a weak negative, a bath of 70 to 80 grs. may be used with advantage. The following is a very good bath for ordinary work—

Nitrate silver, 50 grs.; Distilled water, 1 oz.

Test with blue litmus paper. If acid, neutralise with carbonate of soda. The bath becomes weaker with every sheet of paper sensitised; to obviate this a solution of 200 grs. nitrate of silver added to 2 ozs. of distilled water, and for every sheet of paper sensitised 2 drms. of this solution are added to the bath. The solution should fill the dish about half an inch. Float the paper by taking hold of the two diagonal corners, then by bringing the hands together a curve will be formed. The middle will be the first part to touch the solution; by lowering the corners the bubbles will be driven to the edge. After leaving it on the bath for about one minute, raise the paper, to see if there are any air bubbles; if so, they must be broken with a quill. Then put it down on the bath again for about another two minutes; leave the paper longer in winter. It should be drawn over the edge of the dish, to remove solution, hung up till surface dry, and placed between clean blotting paper.

This paper will not keep longer than a week, unless preservatives are used; the best method of preserving is to soak chemically pure blotting paper in a solution of carbonate of soda 1 in 20; when this is dry, lay with the sensitised paper alternately in air-tight box under pressure; it will keep thus for a month. E. B.

**Question 17.**—A batch of prints refuse to tone. What are the probable causes of, and how would you set to work to find out and remedy this fault?

**ANSWER.**—The most probable causes of prints refusing to tone, are (1) the acidity of the bath, and (2) of the prints themselves in ready sensitised paper; (3) small amount of gold in the bath; (4) excessive washing before toning in some cases.

(1 and 2) Acidity. This may be detected by litmus paper, and corrected by the addition of pure chalk or sodic carb. just before toning, and allowing the bath to settle before using. The auric chloride generally contains free acid, although the bath may have been made with sodic carb., yet it becomes acid again by the immersion of ready-sensitised paper, which contains an acid (citric or tartaric) in order to preserve it.

A good plan is to wash the prints in a weak solution of waashing soda before toning.

(3) Want of gold. Baths should always be strengthened before use, and after use a few drops of acetic acid added, and the bath filtered and kept in the dark. If this is not attended to, the gold settles down as a fine black or purple deposit, and so weakens and fouls the bath.

(4) Excessive washing. In a toning bath made up with chloride of lime, it is advisable to leave a little of the free silver salt in the prints for toning. LINDUM.

**Question 18.**—What is the best method of washing prints?

**ANSWER.**—The simplest way of washing prints is to soak them for, say, three hours, in a large basin of water, changing the water every quarter of an hour. Each time of changing water the prints should be taken out one by one and allowed to drain before placing them into the clean water. Two or three times also during the three hours, they should be taken out separately, laid face upwards on a sheet of glass, and thoroughly well sponged. They will then be found to be free from any traces of hypo. If the time necessary for this process cannot be afforded, and if there is a constant supply of water available, recourse must be had to a mechanical washer. The supply of water should come in at the bottom of the tank, and be so arranged as to keep the prints always in motion, the waste water being drawn off at the bottom. One of the best forms is that in which the water is allowed to enter the tank over a small water-wheel, by means of which it is caused to rock, a perforated tray holding the prints. The water is allowed to run in slowly, and when it reaches a certain depth a syphon comes into action and continues to draw off the water until the tank is emptied, when it again begins to fill, and so on. The prints are thus alternately soaked and drained, whilst the rocking of the tray prevents them from sticking together. WORFIELD.

Papers have been received from and marks awarded to A. C. S., Worfield, Lindum, R. C. M., Electra, Biarritz, Sunesis, Developoid, E. B., Spain, C.



## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Barrow-in-Furness.**—The Photographic Section of the Barrow Naturalists' Field Club held their monthly meeting on the 26th ult., Mr. W. Dunlop, Vice-President, in the chair. Mr. John Redhead read a paper, the first part of which was on "A Holiday Tour in Wharfedale and Wensley Dale," and the second part "A Tour in Clapham, Ingleton, and Kirkby Lonsdale District," which were illustrated by about fifty slides, including some of Fountains Abbey. The slides were of a very high order, and a great many were deservedly applauded. Mr. Redhead consented to exhibit his slides again on the 9th inst., at the general meeting of the Club. Mr. J. T. Hynes and Mr. J. P. Smith were elected members of the section.

**Birmingham.**—The ordinary meeting on the 26th ult. was the first of a series of meetings to be held in the Midland Institute. There were seventy-nine members present, Mr. Alex. Tucker, C.E., in the chair. Mr. A. J. Leeson gave a paper on "Photographic Shutters." He said that the object of the paper was to bring before the members some of the different shutters at present in the market, with explanations of their mode of working and in some of the fastest giving the speed as tested by himself, and Mr. Jerome Harrison, with Underwood's shutter-testing chronograph, which was worked with an "Otto" gas engine. The shutter registering the highest speed was Marion's (Bain's patent) Crown shutter, which gave a speed of  $\frac{1}{10}$  sec.; the Caldwell shutter gave  $\frac{1}{100}$ ; the Kershaw shutter ( $\frac{3}{8}$  in. aperture),  $\frac{1}{100}$ ; Underwood's Instantolux,  $\frac{1}{100}$ ; Shew's Eclipse (and the Mattioli),  $\frac{1}{100}$ ; Thornton Pickard,  $\frac{1}{100}$ ; Thornton Pickard (double blind,  $\frac{2}{3}$  in. aperture),  $\frac{1}{100}$ ; Sands and Hunter's,  $\frac{1}{100}$ ; Voigtlander's Sector,  $\frac{1}{100}$ . The speeds of other shutters tested were given, and shutters were exhibited made by Messrs. Wratten and Wainwright, Wray, Marion and Co., Thornton-Pickard (including their Faintbreak, with their stereoscopic), Shew and Co., Tylar, Place, Underwood, etc., and also the Guerry Flap, Wollaston's Diaphragmatic, Newman's, new Kodak, etc. The Chairman announced that the large number of shutters Mr. Leeson had placed on the table would be on view after the discussion, instead of handing them round the room during the reading of the paper. Mr. W. J. Harrison then gave a short paper on "Instantaneous Photography." He said that Goddard first made instantaneous photography possible in 1841, by his discovery of the extreme sensitiveness to light of silver bromide. Five things were necessary to secure an instantaneous picture, viz., a good light, suitable shutter, lens, plate, and camera. The time of the year when instantaneous work could be best practised was from March to September, and the time of day between 10 o'clock and 3 o'clock. Speaking of shutters, he said most of his successes had been achieved by means of the Grimstone. Mr. Harrison exhibited the new double hand-camera by the Stereoscopic Company, and took several flash-light pictures of the audience by means of Hibbert's repeating flash-lamp.

**Brighton.**—The last meeting was held on the 24th ult. The President, Mr. J. P. Slingsby Roberts (in the chair) delivered his inaugural address, which was listened to with much attention, and a good discussion ensued.

**Croydon.**—The fortnightly meeting was held on Monday, the 2nd inst. Mr. Burroughs and Mr. Goddard were elected members, and four other gentlemen proposed. The subject of the evening was "Lantern Slide Making by Contact Printing," which was ably handled by Mr. C. F. Oakley, working with Thomas's plates. Both pyro and hydro were in turn used, and a large range of tones obtained. The value of toning after development was emphasised where a slide, from under-development or other causes, is lacking in density. Subsequently, a number of brilliant exemplars of Mr. Oakley's skill were thrown on the screen, and elicited much applause from a crowded audience. The Society continues to grow so rapidly that the executive are beginning to consider whether the present spacious meeting-room is large enough. The tickets for the annual dinner on Monday, the 9th inst., are being rapidly taken up, and a large and influential company is expected. Gentlemen desiring to attend should make immediate application to the Hon. Sec. On Monday, the 16th, Mr. A. E. Isaacs holds forth on "Lenses," including the theories and practice involved in their use for photographic purposes.

**Darlington.**—The annual conversation in connection with the above Society took place in the Mechanics' Hall on the 27th ult. The hall was tastefully decorated and furnished. There was on view a large collection of photographs, the work of members, including those sent in for the annual competition in January, and also a great many enlargements, chiefly pictures which had won prizes in previous years. Mr. E. Ensor (Vice-President), in the unavoidable ab-

sence of the President, welcomed the guests, and remarked that the Society was doing good work and increasing in membership. This was the first year there had been an open class, and it was hoped that next year, when more publicity was given to the fact, there would be a much better exhibition. The Mayoress of Darlington (Miss Barron), who was accompanied by the Mayor (Mr. T. M. Barron), gracefully presented the prizes to the successful competitors as follows:—Class I. (Open to members): 1st, Mr. T. Howlett (a 24 in. by 18 in. enlargement of "Oban Bay"); 2nd, Rev. C. G. Davis, AMATEUR PHOTOGRAPHER Bronze Medal for the best single picture; Mr. T. Howlett, "The Loose Shoe." Class II. (Open): 1st, Mr. T. Howlett (24 in. by 18 in. enlargement), "In Castle Eden Dene;" AMATEUR PHOTOGRAPHER Silver Medal for best single picture, Mr. E. Barker, West Hartlepool, "Aberdovey," North Wales. Class III. (Lantern Slides). 1st, Rev. C. G. Davis; Photography Bronze Medal for the best single slide, Mr. T. Howlett, "Oban Bay." Mr. R. A. Luck thanked the Mayoress for presenting the prizes, and remarked that it was the first time a member of the Society had held the honourable position of Mayor. About 150 lantern slides were then passed through the lantern and proved a most interesting feature of the evening's entertainment. A capital string band was in attendance, and played selections at intervals. There were about 200 guests present.

**Dukinfield.**—At the first weekly meeting for practical demonstrations on the 25th ult., the President, Mr. W. H. Shirley, presiding, Mr. John Winterbottom, Hon. Treasurer, gave a demonstration on "Alpha Paper." After a few pointed remarks and very practical hints on the method of working this paper, he proceeded to develop several pieces previously exposed, with a view to showing the various tones to be obtained by different methods of treatment, and obtained a very satisfactory series of results. The opinion of the members was that Alpha was one of the most useful papers on the market.

**Guildford.**—On the 24th ult. a meeting and conversation were held at the County and Borough Halls, Guildford. Despite the inclemency of the evening, there was a good attendance of members and friends, including a number of ladies, who took great interest in the proceedings. The President of the Society (Mr. G. J. Jacobs, F.R.A.S.) delivered a very interesting address, pointing out the uses and advantages of photography, not only as a pastime, but as an aid to the advancement of science. He alluded to the recent reports as to the discovery of photography in colours, and pointed out the application of photography to ascertain the motions of the stars and the identification of their constituent substances. This portion of the lecture he illustrated by negatives of star spectra taken at Harvard University, U.S.A., by Professor Pickering. He then gave a brief description of modern flash-light photography, illustrating his remarks by taking a flash-light photograph of the meeting. An exhibition of lantern slides by gold medalists, kindly lent by Messrs. Mawson and Swan, then took place, the lantern being most efficiently manipulated by Mr. Martin, microscopist, of Guildford, who, it will be remembered, rendered similar service with so much success at Dr. Dallinger's lecture some time ago. A number of lantern slides by Mr. J. Russell followed, and were much appreciated. There was a good display of prints and photographic apparatus by members.

**Hackney.**—There was a lantern exhibition on the 26th ult. In giving out the Society announcements, the Secretary remarked that he was glad to be able to congratulate one of the members, Mr. S. H. Barton, on having won the AMATEUR PHOTOGRAPHER first prize for lantern slides. Amongst the members who showed slides were Messrs. Dean, Avent, E. G. F. Jones, Herbert Smith, Barton, and Gosling. Messrs. T. A. Salmon and J. Harverson were nominated for membership.

**Harrogate.**—A meeting was held on the 3rd ult., Dr. A. G. Russell, J.P., President, in the chair. Mr. A. A. Pearson, of Leeds, read a very interesting paper on "The Chemistry of Photography," which he illustrated with numerous experiments.

**Huddersfield.**—The ordinary meeting was held on the 25th ult., Mr. T. K. Mellor, Vice-President, in the chair, when the AMATEUR PHOTOGRAPHER Prize Lantern Slides were exhibited to a somewhat small audience. Some of the sets of slides being very fine were received with acclamation. Samples of the Barnet plate, sent by Messrs. Elliott and Son, were also distributed.

**Isle of Thanet.**—Ordinary meeting held February 25th. Mr. A. Vigar gave a practical demonstration on "Photo-Micrography," before a well filled meeting, Mr. W. Saunders, Vice-President, occupying the chair. Several fine quarter-plate photographs of microscopic objects were exhibited by the demonstrator, who also carefully illustrated the whole process, from focussing up to the production of the finished negative.

**Keighley.**—The annual meeting of this Association was held on the 24th ult., Mr. Alexander Keighley in the chair, when there was a good attendance. Mr. Keighley briefly referred to the successful career of the Association since its formation, particularly last session, and went on to say that the exhibits of the members at the recent institute conversations far exceeded the expectations of the Com-



mittee and showed the interest that was manifested in the work of the Association. The show of pictures was an excellent one and far exceeded the exhibition of the previous year. The balance carried forward was favourable, and some of the excursions had been well attended and good results obtained. The following members were elected officers for the year: President, Mr. Samuel Banstow; Vice-Presidents, the Rev. T. Mellorey and Mr. Alex. Keighley; Treasurer, Mr. Walter Mitchell; Committee, Messrs. Thos. Heaps, A. Haggas, E. Myers, A. N. Kershaw, R. Timson, R. Smith, and C. Smith, with Mr. John Gill as Secretary. At the conclusion of the annual business, Colonel Sugden gave a very interesting lecture on "Ancient Egypt," which was graphically described and illustrated by a fine and extensive collection of views of the most noted ancient temples, colossal statues, and other large and interesting relics of olden times. The principal dimensions of some of the larger temples, the weight and size of some of the stones used in the buildings, and the distance these had to be conveyed from the quarries, showed that great ingenuity and mechanical skill must have been exercised by this ancient and interesting people.

**Lancaster.**—At a meeting held on the 24th ult., Mr. J. W. Pickard, Vice-President, in the chair, the No. 1 Monthly Competition Lantern Slides lent by the AMATEUR PHOTOGRAPHER were on view. In addition to these, 132 slides by members of the Society were passed through the lantern by Mr. J. H. Storey, who, using the etho-oxygen lime-light, obtained splendid results. The slides were freely criticised. Three new members were proposed.

**Leith.**—There was a lime-light exhibition of a miscellaneous collection of photographs, the work of the members of the society, on the 24th ult., and from first to last it engaged the interest of a large audience. The examples of art thrown upon the screen included remarkably fine specimens, which had secured high honours in open competitions for amateurs, and all the pictures shown displayed at once an effective taste in subject and a superior skill in reproduction. Mr. William Dougall (President) occupied the chair. Having welcomed the large audience, he went on to say that the association was a very young one, yet he thought its short history both interesting and promising. Composed entirely of amateurs, and numbering only some forty members, including two young ladies, still, several substantial prizes, won in open competition, had come to individual members, as already noticed in their annual report. That was the third annual exhibition of members' work and these popular evenings were given, first, for the entertainment of their friends, and, next, for giving a zest to the efforts of the members in the pursuit of their delightful art, and, lastly, for inducing others to join the association. The slides to be shown were, of course, a miscellaneous collection, and would not admit of any connected description. Some of the happy hunting-grounds of the young photographer occurred pretty often, but there were many scenes less familiar, and these would be shortly described by Mr. Hunter. He trusted their efforts to please would be successful, and might be the means of inducing both young men and maidens fair to join the society. Mr. A. D. Guthrie, who manipulated the lantern, then put the slides through. Music was provided at intervals.

**Liverpool.**—The second ordinary meeting of the twenty-eighth session was held at the Association's Club-rooms, 3, Lord Street, on the 26th ult., Mr. Paul Lange (President) in the chair. The following were unanimously elected members of the Association, viz., Robert W. Hill, James H. Wood, T. F. Lloyd, Thos. Cook, Wm. Cook, J. Bardsley, Mrs. Marriott, and Jos. Robinson. Mr. Sinclair was elected an hon. member of the Association. Mr. Cade (Messrs. Marion and Co.'s representative) exhibited and explained their new hand-camera for 1891, "The Radial." A paper and demonstration on "Eikonogen v. Pyro," was then given by Dr. B. Jumeaux, of the Manchester Amateur Photographic Society, and the meeting terminated with a vote of thanks to the two gentlemen who had come from such a distance.

**Peterborough.**—The monthly meeting was held on the 2nd inst. The lantern slides entered for the competition, after being exhibited on the screen, were judged by the members by ballot, the winners being Nicholls first, Perkins second, and Noakes third. The Secretary read notes on "Comparative Rapidity of Lantern Slide Emulsions."

**Pudsey.**—This newly-formed Society held its second meeting on the 24th ult., a good number being present. After the business of electing the officers had been gone through, a bi-unial lantern was brought into use and over 150 slides were passed through. The quality of work put upon the screen showed that, although new to the Society, some of the members were old hands at slide making. A most enjoyable evening was spent. Four new members were enrolled.

**Richmond.**—At the weekly meeting on the 27th ult., Mr. C. H. Davis in the chair, the accounts of the recent lecture by the President, Major J. Fortuné Nott, were submitted, showing a balance of £4 available for the Richmond Hospital. Failing a promised demonstration, there was no special subject on the programme, but an interesting discussion took place, turning chiefly upon dodges in the

development and mounting of lantern slides. The conditions were settled for a lantern-slide competition.

**Shoreditch.**—The first meeting in connection with the proposed Shoreditch Photographic Club will take place at the Coffee Rooms, 151, High Street, Shoreditch, on Wednesday, 11th inst., at 8.30 p.m.

**Shropshire.**—Upon the occasion of the last meeting of the members of the Shropshire Camera Club, the President, Mr. Greateorex, read his inaugural address, which was listened to with much interest; there was on the same evening an exhibition of photographs and lantern slides. No less than 600 invited guests were present.

**The Photographic Society.**—At the monthly technical meeting held on the 24th ult., Mr. Leon Warnerke, Vice-President, in the chair, Mr. G. F. Hayward exhibited some daguerreotypes taken in 1842-3 and a positive taken about 1844. Mr. W. E. Debenham then opened a discussion upon the dark-room and its fittings. He first described the window of the Society's dark-room. A sheet of pot yellow is fixed in the window; inside that are a series of sliding panels filled with ruby fabric, golden fabric, a yellowish-green glass, and a deep ruby glass. He then described a number of lamps exhibited by various firms, and said that another useful addition to a dark-room was a drying box for drying plates that had been backed. The Chairman said that for backing plates he used a mixture of glycerine and gelatine, such as is sold for copying purposes. Mr. E. Clifton thought it was impossible to obtain optical contact in this way; he found ordinary Brunswick black made a good backing. Mr. W. E. Debenham considered the worst black of all was bitumen and lamp-black ground together. Mr. E. Clifton considered that a plate rocker was extremely useful in the dark-room, as it enabled one to go on with other work while a plate was developing. The Chairman described a lamp he used when travelling. Mr. W. E. Debenham drew attention to some celluloid dishes that were exhibited. Mr. E. Clifton mentioned that they softened if used with methylated spirit. Mr. W. England then showed his travelling dark tent. The Chairman then referred to Lippmann's photography in colours. A discussion ensued, in which Messrs. Debenham and Lawrance took part. The following is the list of exhibits:—Messrs. Vevers, Leeds, simple folding lamp, dropping tube, and minim measure, Kinnear's gas tap and plate-lifter; Messrs. J. Preston, Leeds, Chameleon lamps for oil and gas, Argand burner with ruby chimney, and celluloid dishes; Messrs. Reynolds and Branson, lamp, with pass giving white or ruby light at will; Messrs. Benham and Froud, candle lamp; the London Stereoscopic Company, a large dark-room lantern; Messrs. J. J. Griffin, celluloid dishes, weights and measures.

**Toynbee.**—On the 24th ult. Mr. H. Dalton read a very interesting paper, entitled "Camping and Tramping in English Lakeland," an account of a holiday spent in that district, and illustrated by some sixty views taken during the tour. A description of camp luggage and photographic apparatus was given. There is little difficulty in obtaining suitable camping ground, and very beautiful pictures of places, quite away from the route of the usual tourist, were shown. The evening closed with a number of humorous slides by Mr. Coade, copies of Ally Sloper's difficulties upon his various half-holiday excursions.

**West London.**—At the meeting on the 27th ult., Mr. W. A. Brown in the chair, the Secretary read a letter from Mr. Biden, requesting the Society to send a deputation to a meeting he had convened to consider the federation of the various societies and other matters. It was determined that the President, the Hon. Secretary, and Mr. Hodges be requested to attend the meeting, but not in any way to pledge the Society. The question as to the Society entering for the Crystal Palace Challenge Cup was brought forward by Mr. Hodges, and it was decided that the Society should take steps in the matter. Members were requested to send pictures in to the Society's room to be selected from by the Committee of the Council on the Saturday succeeding the next ordinary meeting. Some slides were then put through the lantern.

**Woolwich.**—A lantern evening was given on the 26th ult. at the Y.M.C.A. Institute, No. 1, Conduit Road, Plumstead. The slides, which included a great variety of subjects, were lent by Messrs. Mawson and Swan, and were of excellent quality.

**Sale of the Photographic Apparatus, the property of the late Archbishop of York.**—The following prices were realised:—A Watson and Sons light Premier Camera, 12 by 10, brass bound, six double dark slides and two solid leather cases, 16½ guineas; a Meagher portable bellows camera, 12 by 10, two double dark slides and one single, 9 guineas; a Meagher portable bellows camera, 7½ by 4½, with six double backs and two leather cases, £5 10s.; a Dallmeyer lens 6D, 15½ guineas; Voigtlander, No. 3A Euryscope, £5; ditto 5A, 16½ guineas; ditto landscape No. 6, £5; Suter A3, £5 10; ditto landscape No. 4, £4; ditto No. 3C, £4 15s.; ditto No. 2E, £2 10s.; a pair of stereo lenses, by Grubb, £1 6s. All were in first-class condition, the large camera apparently scarcely used. The total result of the sale was about £120.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4543. **Barnett's Dark Slides.**—Will any amateur who has used Barnett's dark slides, sold by Chadwick, of Manchester, tell me if they are good? They are cheaper than the slides at present in use.—**R. GORDON.**

4544. **Developers.**—Would any one inform me on these two points: (1) Which is on the whole the best developer? (2) Which is the best for a beginner?—**IGNORAMUS.**

4545. **Permission to Photograph.**—Will some amateur please tell me to whom am I to apply for permission to photograph in the following places: the Zoological Gardens, London; Hyde Park, London; Hampton Court, Kew Gardens, Windsor Palace? Any information as to where a permit can be had will oblige.—**A STRANGER.**

4546. **Mounting Opals.**—Will some one tell me the best way to mount photographs on back of glass as sold in shops, called opals?—**D. B.**

4547. **Victoria, Australia, Photographic Apparatus for.**—Enquirer, who is leaving for Australia in April, where he purposes residing, would feel greatly obliged for any advice on the subject. He has already a Rouch's whole-plate and Abraham's hand-camera, the one made by him previous to his "Ideal," but though he has been very successful with it, he thinks of disposing of it and buying another make less liable to require repairs. There being so many various makes, enquirer finds great difficulty in deciding what make to purchase, and will be grateful for any advice on the subject. Are the Ilford plates suitable for the warm, dry climate of Australia, and can they be bought in Adelaide at reasonable prices? Any hints for photographing on the voyage will be very acceptable.—**AUSTRALIA.**

4548. **Enlargements.**—Will some reader inform me how to make enlargements in carbon?—**R. H. D.**

4549. **Book on Toning.**—Can any one recommend me a good book on toning, where to get it, and the price?—**AMATEUR.**

4550. **Exposure.**—What exposure should be given to a water-colour painting, placed on a chair in a studio, at about 9 ft. from a large window, good north light, half-plate camera, rapid rectilinear lens? What time of day this month would the light be best, supposing the weather clear and bright?—**A. F. B.**

4551. **Florence, Exposure at.**—Shall be glad to know about exposure in Florence during April. How does it compare with England in the same month?—**KITTY.**

## QUERIES UNANSWERED.

- Feb. 13th.—Nos. 4500, 4503, 4508, 4509, 4510.  
 „ 20th.—Nos. 4512, 4514, 4517, 4519, 4520, 4521, 4522, 4523, 4524, 4525, 4526.  
 „ 27th.—Nos. 4527, 4528, 4530, 4531, 4534, 4535, 4537, 4538, 4539, 4540, 4541, 4542.

## ANSWERS.

4532. **Celluloid Films.**—(1) **E. H. Fitch**, 34, Angell Road, Brixton. (2) Yes, but more expensive. (3) Yes, results in my experience far ahead of glass plates and quite as easy to work.—**J. E. BLISSAM.**

4529. **Developer Ready-made.**—There are so many of these now on the market that are suitable, more or less, for the plates mentioned, that it is almost impossible to choose one more than another. The shortest way, perhaps, would be to get one of the Ilford formula made up specially at the nearest photographic chemist's. The following are specially recommended by the Ilford plate makers:

No. 1.			
Pyrogallie acid	...	...	1 oz.
Bromide of ammonium	...	...	600 gr.
Water, to make	...	...	6 oz.
Pure nitric acid, exactly	...	...	20 drops.
No. 2.			
Liquor ammonia '880	...	...	3 drm.
Water	...	...	20 oz.
No. 3.			
Solution No. 1	...	...	1 oz.
Water	...	...	19 „
Developer, equal parts Nos. 2 and 3. Or:			
No. 1.			
Hydroquinone	...	...	160 gr.
Potassium bromide	...	...	30 „
Sulphite of soda	...	...	2 oz.
Water, to make	...	...	20 „
No. 2.			
Soda hydrate	...	...	100 gr.
Water	...	...	20 oz.

Developer equal parts. If this is not convenient, no doubt one of the following could supply the necessary article: **E. G. Wood**, 74, Cheapside, E.C.; **Abrahams**, 81, Aldersgate Street, E.C.; or, **Price**, **Talbot**, and **Co.**, 29, Ludgate Hill, E.C.—**WIZARD.**

4529. **Developer Ready-made.**—Can well recommend the Perfection developer, sold by **J. Beau**, New Road, Weybridge. This is excellent for ordinary and rapid work, and keeps well. I have used it for bromide papers, opals, and lantern slides with equally good results. The best all-round developer ever used, price 2s., sufficient to make 40 oz. developer.—**B. H. S.**

4529. **Developer Ready-made.**—A most reliable hydroquinone developer in two solutions is sold by **Hethon Lewis**, of Lansdown Road, Brighton, which gives excellent results with the plates mentioned.—**PHOTO-ROVER.**

4533. **Bicycle Carrier.**—Carson spring carrier is about the best made. I have used one for two years with the same sized camera and have never been troubled with pinholes. Their address is 22, Batchelors' Walk, Dublin.

4533. **Bicycle Carrier.**—If "W. G. O." will look me up at 55, Winchester House, E.C., any day before the 10th of this month, he can see a saddle bag arrangement for carrying a half-plate kit on a safety bicycle, which I find works exceedingly well.—**E. W. T. WARD.**

4532. **Celluloid Films.**—**J. D. England**, 21, Charles Street, Queen's Road, makes what you require. The results are equal to glass.—**PHOTO-ROVER.**

4532. **Celluloid Films.**—Write to **London Stereoscopic Co.**, 54, Cheapside, E.C.; or, **Horne**, **Thornthwaite**, and **Wood**, 416, Strand, W.C. Have seen excellent results from both.—**WIZARD.**

4536. **Varnishing.**—A negative may be retouched either before or after varnishing, but it is advisable for a beginner to work over the varnish, as the film, being thin, an inexperienced worker is apt to make a hole through it if not protected by the varnish. Many good professional retouchers get rid of the larger "patches" on the naked film and then work up the "fine grain" over the varnish.—**WIZARD.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S POST if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT:**

**NOTE.**—Anyone requiring an opinion upon photographic apparatus, plates, etc., must give a number or initial for identification, as in no case will makers' names be inserted in this column.

**E. A. YERBURY.**—No. 2 lens is the most suitable, and the shutter named will do all you will ever want.

**E. S. D.**—Mouldy hypo solution is not uncommon; the only thing to do is to bottle it each time after use, and keep the bottle well-corked. A concentrated solution may be made by putting 1 lb. of hypo in a bottle and pouring on to it sufficient hot water to make 48 oz. of solution, the bottle being previously marked by a file or a diamond at the place where this quantity of water comes to. The acid fixing bath is used for negatives to remove pyro stains and harden the film. It can be made by dissolving ½ oz. of tartaric acid in a little water, adding this to 2 oz. of sulphite of soda previously dissolved in a little hot water, and mixing the combined solution with solution of 1 lb. of hypo. We never use anything else for plates now, Ammonia is added to a

fixing bath when it is to be used for prints to neutralise any possible acidity which would cause yellowing and blistering of the albumen.

**BEGINNER.**—(1) Send us up the formula of your ell-onogen solution, and then we can help you. It will still develop, though as black as your hat. (2) The cloudy or foggy patch is "flare," and is a necessary evil from using a lens for the purpose for which it was never intended. See the answers in Quarterly Examinations in photography a week or two back.

**VALOIS.**—The yellow colour of the fixed print is a natural and inevitable sequence from the omission of the operation of toning. There is no possible way of making any print retain the colour it receives during the operation of printing except by toning. If you like to send us up three untuned prints of the colour you so admire we will endeavour to obtain it for you and tell you our method of doing so.

**O. E. F.**—Ask your local chemist, ironmonger, or grocer.

**P. A. WILLIS.**—Probably; if brass, ask the maker. **R. H. D.**—We know nothing of the camera mentioned.

**W. J. D. WALKER.**—Have replied as requested.

**R. W. SAVAGE.**—Communicate with Messrs. Hart and Co. (see advertisement) We have also written to you.

**H. J. FISHER.**—Many thanks for slide, which we much appreciate, and shall have great pleasure in showing the same whenever the slides are exhibited.

**G. BINGLEY.**—The slides are safely to hand. It is kind of you to have taken so much trouble for us.

**E. M. TUNSTALL.**—Many thanks for the paper, which we will have set up.

**W. W. H.**—Your prints look very much as though the hypo solution was slightly acid. Add ¼ oz. of carbonate of soda to every pint, and then try again; if you have no better success we will tone some prints for you, and explain our procedure.

**W. T. PHILLIPS.**—Your letter to hand, and contents noted. We will write you as soon as we get lens.

**LEX.**—You are probably wrong in exposing. The exposure would be about four or five times that for the plate you have been in the habit of using. Reduce the aperture of your existing shutter. Thank you for the print, which is a curiosity. We have a very fine set, sent by another correspondent, of same subject.

**VINDEX.**—We should advise the longer-focus lens. The same lens would be useful for a shorter-focus camera. The only disadvantage with a long-focus lens is that the object is larger, and one has sometimes to get inconveniently distant from object to include it all on plate; still, we should choose the longer focus. The quinol developer mentioned in your note will keep, but add 1 dr. of sulphurous acid to the sodium sulphite dissolved in water, and pour on quinol; shake and bottle.

**T. S. FRASER.**—(1) The outfit seems all that can be desired. (2) For architectural work, it is absolutely necessary to have a swing-back as well as sliding fronts; with this proviso the apparatus would be suitable.

**ISCA DANEMORUM.**—Any W.A.R. lens will cover well in a hand-camera, and be in focus beyond a certain distance, which is dependent on length of focus and ratio aperture. As a rule, these lenses work at too small an aperture. No. 2 lens is certainly the most suitable.

**H. BECKLEY.**—The print sent is of good quality, and we should certainly advise you to enter our competitions. We have many a worse print than yours sent in.

**J. H. SAW.**—The larger-sized camera with longer focus lens would certainly not work so well at fixed focus as the small one you have. We should like to write you by post, if you will forward address and state focus of present lens.

**PRO.**—It is impossible to make a satisfactory solution within the limit you name, i.e., 6 oz. We should advise you to get some acid sulphite solution, and use 1 oz. of this instead of 1 oz. of water. We shall be pleased to give further help if desired.

**AUBURN.**—There is no joke in the matter at all, but the thing is an actual fact, and one can obtain negative or positive results according to the length of exposure, which is extremely difficult to hit correctly. Let us know a few more details, and we will help you further.

**H. H. COBB.**—The fault is in using bromide of ammonium with metabisulphite; the latter constantly keeps getting more and more acid, and there is a general interchange of partners. Replace the ammonium bromide by potassium bromide, and it is certainly advisable to use distilled water. The reduction of ammonia in Solution B will only mean a little longer developing, that's all. Cut a cardboard, or sheet of tin foil, with a square aperture, and glue or nail on the front of the printing frame, and keep the frame in constant and quick motion whilst exposing; move the frame in all directions, up and down, sideways, etc., so as to prevent sharp outlines of vignette showing.

**MANCUNIAN.**—You cannot do better than fix on the camera and slides of which you send description; we know them both to be good articles.

**NOVICE.**—Every negative is over-exposed, and probably insufficiently developed. The colour of the



print of dog is a purple, and is probably obtained on home sensitised paper. You might try the chloride of lime bath. Always pleased to help you.

**JOHN RILEY.**—Your lubricant is a little too strong, or you may be using "finish," and not methylated spirit. Dissolve three grains of Castile soap in an ounce of pure methylated spirit; when the mount and print just begin to curl with the print inside the curl, rub on the lubricant with a soft pad, and allow to curl up again slightly; then pass through burnisher, which should be as hot as the back of the hand can bear, three or four times, then set up on end singly to dry. Never use dry soap. Let's hear from you again.

**ACHILLES.**—We know nothing of No. 1. No. 2 we have tried, and can say they are as good and reliable as any at the price. No. 3 we have written to make about, and shall probably notice.

**R. J. GLANVILLE.**—The gateway is particularly uninteresting, and calls for no comment. The trees would have been decidedly better if slanting across the plate, and both prints would have been better if done on bromide paper. Neither is hardly up to competition standard. Let us see some more work again.

**R. HAILS.**—We can only answer your questions by actually examining the lens, and you will find full directions how to do this in our issue of Jan. 2nd, page 16. All single lenses distort buildings, therefore yours will, but as this distortion is only apparent by mathematical measurements, you may make your mind easy on that score. If, after trying, you cannot actually do as suggested above, forward us the lens, and we will help you.

**J. E. T.**—We have not yet seen the hand-camera, though we have been promised one as soon as they are ready.

**HYPO.**—We should certainly recommend one of the larger-sized No. 5.

**F. KELLY.**—(1) About 75s. per oz. R. Pringle and Co., 40, Clerkenwell Road, E.C.; J. Blundell, 162, Wardour Street, W.; E. Day, 28, Warstone Lane, Birmingham; Johnson and Matthey, Hatton Garden, London. Weigh your crucible, and write and ask for an offer. (2) In following order—3, 4, 1, 2, 3, 4, and 1 can be obtained in white or tinted; 2, tint only. (3) By all means keep to the plate you are using, or else try No. 2. (5) Questionable; we shall have a leader on this shortly. (d) No. 1 or No. 4; in preference, the latter.

**AMATEUR.**—You send no name and address. Read our rules.

**W. G. G.**—We are unable to decipher your address. Please send on addressed envelope, and we will write you.

**E. A. WUNSCH.**—At present we can give you no particulars. Send up a special query upon the subject.

**B. A.**—The slides are classed in the *Photographic Reporter* for this month. We cannot at present criticise the slides. Your letter was not stamped.

**E. F. BROCHER.**—Slides duly to hand; if they are successful the result will be published in the *AMATEUR PHOTOGRAPHER* and the classing of them in the April number of the *Photographic Reporter*.

**SPEN GLAZIER.**—There are several good makes of shutters advertised that will come within your price. We make a rule not to name apparatus.

**J. T. BIRKBECK.**—Many thanks for photographs. Shall we return them?

**C. H. OXFORD.**—See "Our Views" upon the subject.

**J. KIDSON TAYLOR.**—The photographs will be returned in due course, except those that are reproduced.

**A NORTH-WALLAN.**—You give no name and address, so we do not answer your question.

**W. CLEMENT WILLIAMS.**—Thanks for your long letter. Will write you later on.

**CAB. PHOTO.**—(1) All right. (2) Yes. (3) Yes. (4) Better use an I.R. lens. (5) Useful for both, preferably the former. (6) Look up maker's catalogues, and you will find answers to queries 7, 8, 9, 10, 11, and 12.

**SIGMA.**—Both lenses are excellent. We prefer shutter No. 3.

**F. MORLEY.**—(1) Our publishers will be pleased to forward you the February issue of the *Reporter*; your portrait appears in the March issue. (2) Very good value for the money. (3) The latter.

**C. E. F.**—No name and address, consequently we do not answer question.

**DUBLIN.**—October 30th.

**M. M. CUNEO (Portugal).**—Very pleased for you to become a competitor, and forward entry form.

**HUASCAR.**—(1) We have not seen the (a) 1891 hand-camera you mention, therefore can pass no opinion upon its merits; (b) is an excellent apparatus. (2) Answer already given, applies to (c) lens; (d) will do good work. (3) Cannot answer such a question.

**R. S. TRFILLIAN.**—The judges had full control over the awards, and we decline to discuss the why or wherefore of their withholding them. Yes, in the book "Holidays with the Camera."

## Monthly Competition.

### XXII.—SNOW AND HOAR FROST.

Title of Photograph.	By Whom Sent.
Hoar Frost ... ..	G. Williams
A Wintry Day ... ..	F. James
Nature's Own Decorations ... ..	A. W. Gottlieb
In Abernart Park ... ..	D. P. Davies
Pangbourne Lock ... ..	J. A. Booth
A Frosty Morning ... ..	W. Street
Avenue with Snow ... ..	J. R. Roddick
When the Lake is Frozen Over ... ..	E. Wain
Study in Black and White ... ..	Mrs. Cleasby
A Country Lane ... ..	F. D. Thursby
Rinken Glen ... ..	T. G. Winn
Foot of Aber Fall ... ..	H. Irving
Henwood Lane, Wolverhampton ... ..	J. N. Evans
The Hall Drive ... ..	C. Buttanshaw
The Woodman, Southgate ... ..	H. Walker
Snow Scene near Bristol ... ..	H. E. Frew
Kempton Park ... ..	H. L. Bridger
The Old Hedgerow ... ..	E. T. Roberts
Trees Covered with Snow ... ..	J. C. Bell
Kettlebrook Cottages ... ..	C. H. Grant
On the Road near Alton, Staffs. ... ..	H. Meynell
Pool Staircase, near Otley ... ..	R. Bownes
Hard Lines ... ..	Mrs. M. Benyon
A Game on the Quiet ... ..	J. Harriman
Hoar Frost ... ..	J. H. Thornton
The Dippens, Tettenhall ... ..	A. H. Rudf
Princes Park, Liverpool ... ..	A. Grillon
By Icy Ways ... ..	A. F. Stanley
A Snow Scene ... ..	W. H. Banks
Hoar Frost ... ..	E. O. Rawson
A Bright Winter's Morning ... ..	T. Mansell
And it was Wintry Weather ... ..	A. L. M. Bonn
Hoar Frost ... ..	Mrs. Brookholes
The Frozen Bird ... ..	G. T. Firth
A Christmas Visitor ... ..	E. B. Wain
All on a Frosty Morning ... ..	Rev. W. L. Groves
A Winter Scene ... ..	W. Heath
Hoar Frost in Bolney Woods ... ..	Riv. R. C. Macleod

## Quarterly Examinations in Photography.

### QUESTIONS.

- Copy p. vi. of this week's *AMATEUR PHOTOGRAPHER* one-third the size. Give full information as to your method of procedure, and forward a bromide or matt-surface print from the negative\* with your statement. (Wet plates must not be used.)
- Write a brief note on Heliochromy. (350 words allowed.)
- It is desired to obtain a relief cast of a seal. The seal has been photographed and you are in possession of the negative; how would you obtain a cast from it?

(Latest Day for Answers—March 16th.)

\* The negative must be preserved, as it will be required again, and will finally have to be forwarded to the examiners.

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.

2. All answers must be preceded by the question, and should be written on one side of the paper only.

3. A *nom de plume* may be used, but in every case the full name and address must also be given.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—  
"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the *AMATEUR PHOTOGRAPHER* will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the *AMATEUR PHOTOGRAPHER*, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"*Amateur Photographer*," etc.—*AMATEUR PHOTOGRAPHER*, vols. x., xi., xii.; "Journal Almanacs," 1890, 1891; "Reporter," September, 1890; what offers?—Jones, 93, Senegal Road, South Bermondsey.

*AMATEUR PHOTOGRAPHER*, No. 1 to date, 334 numbers, eight or nine soiled, one or two indexes lost; what offers?—Southey, Audenshaw, Manchester.

**Bicycle.**—54 in. bicycle, curved plated handle, bars, etc., and all accessories, in good condition; cost £12 12s.; price £3 10s.; giving up riding; seen by appointment.—W. Davidson, 2, Victoria Road, Kensington, W.

Safety bicycle, splendid full diamond-frame machine, cushion tyres, balls all over, including pedals, condition just like new and guaranteed faultless, not been ridden 20 miles; take £7 15s.; most decided bargain; approval.—Cyclist, 2, Tower Street, Ipswich.

**Cameras, etc.**—Griffiths' Magazine camera, only used a few times, cheap; offers, cash or exchange.—R. Denney, 9, Ripley Street, Lancaster.

Lancaster's quarter International camera and two double slides, every movement, and good as new; 20s.—J. Morritt, 57, York Street, Hull.

Enlarging camera, 12 by 15, and 10 in. condenser, mounted on mahogany base, with iron standards; £7. Can be seen at the offices of the *AMATEUR PHOTOGRAPHER*.—W. Wells, 14, Girdler's Road, West Kensington.

**Cameras, Lenses, etc.**—Camera, quarter-plate, seven double dark-slides, rectilinear and wide-angle lenses, instantaneous and Place's shutter, tripod, quantity dishes, chemicals, printing frames, books; 30s.; cost 120s.; best London-made; warranted perfect.—Hans, Suffolk Street, Birmingham.

Quarter-plate instantograph, with half-plate tripod, silver-ring and wide-angle Rectigrah lenses, with iris diaphragms, seven double dark-slides, window-blind shutter, for sale; total cost in June last, £8; in perfect condition; what offers? Wanted, a No. 3 Kodak.—Coppall, Solicitor, Worcester.

Half-plate portrait lens, 30s.; quarter-plate camera, lens, two double dark-slides, tripod, three packets liford plates, two dishes, and two printing frames, 22s. 6d.; half-plate burnisher, with lamp, 9s.—E. Yerbury, 44, Birchington Road, Kilburn.

Loan of whole or half plate-camera, with best R.R. and W.A.H. lenses, for three weeks at Easter, is offered in exchange for compact hand-camera, with good lens.—Biden, 11, Leadenhall Street, London.

Whole-plate camera, Stereoscopic Co.'s latest and best Optimus R.S. and W.A. lenses, focussing cloth, solid leather case, tripod, all equal new; cost £27 11s. 6d.; price £16 10s.; no offers; approval; deposit.—Bygrave, 15, Canterbury Road, Brixton, S.W.

Half-plate Lancaster's 1891 Instantograph camera, dark-slide, tripod, fitted with f/8 R.R. lens, new; bargain, 68s.—Cheltenham House, Stroud, Glos.  
10 by 8 Premier camera (by Watson), in solid



leather case, with one double dark-slide, two inner frames, two printing frames, Ashford tripod, Ross' lens, all equal to new; cost £24; price £18; no cards, please. — Craggs, St. James' Villa, Maidenhead.

Meagher's half-plate square bellows camera, swing-back, side-swing, four double slides, quarter-plate carriers, Ross' rapid symmetrical lens, leather case, tripod stand, drop shutter, good condition; £10 the lot. — Address, Gravatt, 28, Leytonstone Road, E.

Half-plate long-focus camera, three slides, rectilinear lens, equal to new; £5 10s.—B., 1, Balfour Terrace, Mayes Road, Wood Green.

Half-plate bellows camera, with Lerebours at Secretan's lens and one Tylar's metal dark-slide, no tripod; price £2.—Mr. Lennard, 29, Clarence Street, Marsh Lane, Preston, Lancashire.

Watson and Sons' half-plate light Tourist camera and lens, three double dark-slides, leather bag, etc.; £3 10s.; or exchange with cash for good whole-plate. — F. Sharland, 17, Poltmore Terrace, Exeter.

Half-plate camera (by Farnival), fitted with spirit levels and arranged for stereoscopic work, three double slides, Ross' rapid symmetrical lens, 6 by 5, with Thornton-Pickard time and instantaneous shutter, Optimus portable symmetrical lens, 7 by 5, and pair 5 in. stereoscopic lenses, by Wray, with shutter, canvas case, sliding tripod, a few dishes, plates, etc., all as new; price £14; cost over £20.—Higgin, 202, Upper Brook Street, Manchester.

Griffiths' patent lantern slide camera, whole-plate size, with lens complete, in new condition, 8s. 6d.; quarter-plate camera and three double dark-slides, rapid single lens (working at f/8), folding tripod, bag, all in new condition, also Greenall's expanding shutter; the lot 37s. 6d.—Guthrie, 7, Pitt Street, Leith.

Lancaster's 1890 half-plate Special camera, three slides, R.R. lens, tripod, and case complete, for £5 10s.; also burnisher, 9s.; cost 17s. 6d.—Mottram, Kingswood Road, Moseley, Birmingham.

Stereoscopic camera and changing box combined, Dancer's patent, pair lenses (by Dancer), good condition, mallooth knapsack, 90s.; Diamond detective camera, as new, 15s.—G. W. Burrows, Mayfield Road, Eccles, Manchester.

Half-plate square camera, parallel bellows, rack and pinion, all movements, lens, one double slide, price 38s.; hand-camera, quarter-plate, automatic changing lens, shutter, etc., complete, price 42s.—J. Mercer, 16, King Street, Sparkbrook, Birmingham.

Portable folding 9 by 7 camera, two double dark-slides, in perfect condition, Trench's No. 3 wide-angle plano rectilinear lens, also Dallmeyer's No. 2 patent wide angle landscape lens, for above camera, in tin case, mahogany light-tight plate boxes, etc.; price £6 10s.; cost about £12.—J. E. Thornburn, Low Moor, Bothel Aspatia.

Rayment's patent whole-plate camera, three backs, solid leather case, cost £10, price £6; Ross' rapid symmetrical lens, 8 by 5, 75s.; burnisher, whole-plate, 15s.; cash only; deposit.—Mrs. F., Teviot Villa, Upper Caterham, Surrey.

New circular camera (Fetter's original patent), regulating shutter, back holding five plates, 1½ ins. each, complete with rapid rectilinear lens and view finder, cost 55s. a month back; also small hand-camera, takes 12 plates 3¼ by 2½, cost 35s.; both take excellent pictures; what offers? or would exchange for good quarter-plate hand-camera.—C. Hudson, 4, Esk Villas, Jocelyn Road, Richmond, Surrey.

Dark-Slides.—Two double dark-slides, for Lancaster's half-plate Instantograph, new condition; 14s. 6d.—Cass, Cocker Street, Blackpool.

Dry Plates.—A few dozens of Monckhoven's splendid dry plates (sensitometer No. 21) at half-price, sizes quarter to 15 by 12; good half-plate set wanted.—Tonkin, 61, Beauchamp Road, Clapham Junction, S.W.

Gas Regulator, new; cost 25s.; offers?—P., 81, Bishopsgate Street Within, E.C.

Hand-Cameras, etc.—For sale, or exchange for salmon tackle, Rouch's quarter-plate hand-camera, in leather case, improved shutter, detachable plate reservoir, and extra long extension to suit any lens.—E. J., Bell Street, St. Andrews, N.B.

Focussing hand-camera, 5 by 4, three double dark-slides; cost £10; for £4; very good condition.—W. Brocklebank, Christ Church, Oxford.

Hand-camera (by Franks), quarter-plate R.R. lens, Kershaw shutter, in leather-covered case, also printing frames, paper, chemicals, and bottles complete, nearly new; £8 10s.; approval; deposit.—James Chadwick, 5, Oak Street, Littleborough.

Dr. Krugener's patent hand-camera, carries 30 plates 3¼ by 3¼, with 30 Samuel's patent sheaths, good as new, only been used twice; cost £7 10s.; what offers?—J. H. Sykes, Newsome Cross, Huddersfield.

Hand-camera, the Talmer, takes 12 quarter-plates, new, in perfect order; price 40s.—J. E. Thornburn, Low Moor, Bothel Aspatia.

Ideal hand-camera, first-rate condition, good results; what offers?—Short, 16, Perryin Road, Acton.

Lanterns.—Will exchange lantern, with 24 chromo slides, for whole-plate camera and slide, or take 30s.—Weatherall, Monk Heselden, co. Durham.

Optimus enlarging lantern, 8 in. compound con-

densers, mahogany body, large Argand lamp, in perfect condition. Fitted case to take chemicals, etc.; cost £13; price £8.—Moon, 3, Coleman Street, E.C.

Lantern Slides.—21 photographic lantern slides, beautiful scenes; 10s.; cost more than double.—T. W. Milburn, Battle Hill, Hexham.

Lenses, etc.—For sale, a pair of Harrison's Globe W.A. lenses, 3 in. focus, cost £4 16s., price £2 10s.; Levi's portrait lens, 15s.; Lerebours and Secretan's quarter-plate portrait lens, 15s.; quarter-plate portrait lens, 10s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

Lancaster's view lens, Iris diaphragms, and shutter, 20s.; sliding tripod, 7s. 6d. Wanted, half dark-slide or offers.—Gee, Bank, Slaithwaite.

Splendid French double rectilinear quarter-plate lens, almost new; 10s., to immediate purchaser.—Hildyard, 11, Moreton Gardens, London.

Wray's 5 by 4 rapid rectilinear, Iris diaphragm, works f/5.8, cost price 65s., never used; take 53s. cash.—Toulmin, Jessamine House, Hampton, Middlesex.

For sale, fine 7 by 5 rapid rectilinear lens, Waterhouse diaphragms, new condition, 30s.; Kershaw shutter, 10s.; half-plate rapid landscape lens, works f/8, Waterhouse diaphragms, 12s.—McComas, 5, Laurence Pountney Lane, City.

Pair of Dallmeyer's double lenses, excellent condition; exchange for hand-camera lens by good maker, or cheap for cash.—Smith, 393, Alfington Road, Nottingham.

6 by 5 rapid rectilinear Dallmeyer lens, Iris diaphragms, new last season; cost over £5; what offers?—Dean, 118, Soho Hill, Birmingham.

Lancaster's half-plate landscape lens, Iris diaphragm, and shutter; 17s. 6d.; bargain.—S., 148, Stanstead Road, Forest Hill.

Sets.—Lancaster's quarter-plate Instantograph set, complete, perfect condition; 35s.; deposit.—Briggs, 21, St. Saviourgate, York.

Lancaster's 1890 half Instantograph camera, rapid rectilinear lens (unsold), handsome set; 74s.; any time.—Charles Howard, 55, Percival Street, Clerkenwell.

Sundries.—Platinum ring, weight ½ oz.; 40s., or offers.—R. Sharland, 73, Santos Road, Wandsworth, S.W.

Balustrade, height 2 ft. 4 in., length 5 ft., £1 5s.; with pedestal, £2 2s.; used a few times.—Hunter, Stationer, Hexham.

Photographic half-plate rolling press, thorough order, cost 30s., 15s., bargain; also half-plate developing rocker, cost 30s., 10s., bargain.—Edward Packman, 338, Romford Road, Forest Gate.

Two whole plate and two half-plate spoons Eastman's stripping films (24 exposures) to be sold cheap; no reasonable offer refused.—W. G. Brewis, Darlington.

Tricycle.—Rudge Rotary tricycle for sale, cost £20; or exchange for hand-camera or other photographic apparatus.—Mr. Oxford, Devizes.

Views.—Peak of Teneriffe, Great Caldera of Palma, views.—Soar, 1, Sussex Villas, Kensington, London, W.

Violin, etc.—Violin, splendid copy of Amati, rich, brilliant tone, fine preservation, complete with baize-lined case and excellent silver-mounted bow; only 15s. 6d. lot; great bargain; 20s. worth of good unsold music given in gratis; most genuine offer obtainable.—Write, Mrs. Graham, College Buildings, Ipswich.

## WANTED.

Cameras, etc.—Quarter bellows camera, Instanto or ordinary, cheap; particulars, make.—Gordon, 47, Arbury Road, Bow.

Cameras, Lenses, etc.—Enlarging camera, up to 12 by 10 or over, daylight preferred, cheap for cash; also hand-camera, any good make, complete with lens and shutter, or parts if cheap; state full particulars.—Moorhead, 30, Rosemary Street, Belfast.

Half-plate camera and lens (Euryscope preferred), must be good; state lowest price for cash.—S., 16, Palace Road, Bowes Park, N.

Whole-plate and half-plate cameras, each with three double slides and stand, all must be thoroughly seasoned and brass-bound, to resist damp climate, also excellent lenses for above, Optimus or other good make, camera cases, ruby lamp, dishes, and sundries; offers for whole or part invited, stating particulars and prices; approval; deposit.—Cameras, 46, Thurlow Street, Salford.

Half-plate camera, with lens, double slides, stand, etc.; approval.—State price to Rabett, Leicester Road, Maidene, Newport, Mon.

Hand-Cameras, etc.—Adams' Ideal detective, 12 plates, Wray's R.R. preferred; state lowest; full particulars.—J. B., Hazel Bank, Sydenham Hill.

Hand-camera, must be in good condition; approval.—Percy Morris, School Hill, Lewes.

Hand-camera, of thoroughly good description, in exchange for Rudge Rotary tricycle, cost £20.—Mr. Oxford, Devizes.

To exchange half-plate International camera, lens, and stand for good, useful, and reliable hand-camera, or would sell cheap.—F. Powell, care of Arnold and Son, Chipping Sodbury.

Kodak, No. 2, 3, or 4, in good condition.—No. 119, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Swinden and Earp's hand-camera, in exchange for Fallowfield's Facile, fitted with Dallmeyer's double combination stereo portrait and view lens and finder, in perfect order.—Can be seen at the offices of the AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C. (Broughton, No. 98.)

Quarter-plate hand-camera.—C. H., 78, Isledon Road, Holloway, London.

One dozen, in lot or singly, in good condition; state makers and prices.—No. 120, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lantern, in good condition.—C. H., 78, Isledon Road, Holloway, London.

Lantern Slides in sets, short stories, good comic, any sort, well coloured, also plain photographic slides, travel, must be very moderate.—No. 121, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lenses, etc.—Quarter or 5 by 4 R.R. lenses, 5½ in. best only.—Longden, Bank Street, Sheffield.

9 by 7 Optimus R.R. or other good make, also Thornton-Pickard time shutter to fit, good condition.—Avery, 45, Park Street, Dorset Square, London.

Wray's 5 by 4 narrow-angle landscape lens, with Iris.—H. Sprunt, 75, Loampt Vale, Lewisham, S.E. Negatives.—Quarter-plate negatives of English or Welsh scenery, Cornish coast, etc., for taking off lantern slides, must be good; will pay for loan of, or buy them.—Write, stating particulars, Taylor, 28, Gaius Street, Paisley, N.B.

Original cloud negatives, any size, loan or exchange for others.—Write, E. Thomas, 86, Chester Road, North Kensington, London, W.

Sets.—Quarter-plate Lancaster's 1890 pattern Instantograph set, must be in good condition.—F. Lees, Buckton Grange, Stalybridge.

Approval, quarter-plate set, about 25s.—Particulars to Proctor, Britannia Terrace, Salbourn.

A quarter-plate Instantograph set, 1890, also finder and case.—Lisle, 10, Upper Villiers Street, Wolverhampton.

Slides.—Six double slides for quarter-plate Instantograph.—Mr. Wheatley, Stanley Cottage, Pembroke Road, New Southgate.

Sundries.—To exchange AMATEUR PHOTOGRAPHER weekly with Friday's "Bazaar."—Evans, Minehead Somerset.

## Lantern Slide Exchange.

NOTE.—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

Will exchange one dozen best quality slipping slides, in new condition, for any coloured slides, suitable for children's entertainment.—Guthrie, 7, Pitt Street, Leith.

A GENTLEMAN, thoroughly well known in the photographic world, author and translator of several photographic works, is desirous of meeting with a Partner, with one or two thousand pounds, to start a Photo-mechanical Printing Works. No possible risk. Knowledge of photography not essential. Partner may be active or sleeping. Apply, GRETA, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

The Tent and Studio may be used in combination, or independently of each other, and everything is sent out complete and ready for use.

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## THE BOOK OF THE LANTERN.

By T. C. HEPPORTH, F.C.S.

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# The AMATEUR PHOTOGRAPHER

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No. 336.] VOL. XIII.]

FRIDAY, MARCH 13, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

OUR VIEWS.—Liverpool Exhibition—"Seven Ages of Man" Competition—AMATEUR PHOTOGRAPHER 1890 Prize Slides—Camera Club—Glasgow Society's Exhibition—AMATEUR PHOTOGRAPHER'S ANNUAL—Contents of the *Photographic Quarterly* for April—Alfred Parsons' Private View—Mr. Melhuish's Rollholder—Note on Advising on Apparatus.

LEADER.—Photography in Natural Colours.

LETTERS.—A Travelling Portfolio Club—"Photographic Reporter" (Brooker)—Hand-Camera with Swing Front (Brooker)—Photography in Colours (Gordon and Stow)—Stereo Mounts (Phillips).

ORIGINAL ARTICLES.—Composition, Light and Shade (Robinson)—Photo-Micrography (Pringle)—Chemistry for Photographers (Bothamley)—The Illustrated Novel of the Future (Pearce)—The Princess of Wales and Photography.

NOTES FOR NOVICES.—The Diaphragm.

EXHIBITIONS.—Liverpool International Photographeries—From Overture to Finale—The Opening Conversazione—Awards—Prominent Pictures of the Show.

NOTES.—*Edinburgh*: The Photographic Society's Meeting—Paper on "Gelatin-Chloride Papers and their Manipulation"—Photographic Supper.

APPARATUS.—"Climax" Hand-Camera—Roberts's Hand-Camera.

SOCIETIES' MEETINGS.—Bath—Bolton—Bournemouth—Brechin—Cardiff—Cambridge—Croydon—Dewsbury—Ealing—East Southsea—Hastings—Herefordshire—Holborn—Holmfirth—Ireland—Leeds—Lewes—Lewisham—Maidstone—Morley—North London—Notts—Oxford—Photographic Society—Putney—Richmond—Sheffield—South London—Southport—Southsea—Sydenham—Wolverhampton.

THE photographic exhibition promoted by the Liverpool Amateur Photographic Association was opened with much ceremony, which is described at considerable length in another column, on Friday evening last. The initial opening ceremony was a conversazione, at which there were certainly not less than 3,000 people present. We have now for nearly twelve months kept the plans and movements of the Exhibition Committee before our readers, and it affords us unbounded satisfaction to be able to record that their exertions, so ably led by the President of the Association, Mr. Paul Lange, and carried out by Mr. Thomas Mayne, the Hon. Secretary, have resulted in a photographic exhibition upon which there can be but one verdict, *i.e.*, that all things have been done well, and that Liverpool holds the proud position of having in the rooms of the Walker Art Gallery the largest and best arranged exhibition of photographs that has ever been gathered together in this country.

Many of our readers will remember how high were the encomiums we passed upon the 1888 Liverpool Exhibition, but it is admitted on all sides that 1891 is better. There

are more pictures, and they have, none of them, except in the champion and "not for competition" classes, been exhibited before. Prizes have been awarded liberally by the judges: Captain Abney, Messrs. Pringle, Gibson, Webster, Robinson, and Gale; but we think the public verdict will support the awards in almost every case.

On the next page we give a portrait group of the judges, with Mr. Mayne, Mr. Tomkinson, and Mr. Stanistreet. For this picture we are indebted to Mr. Thompson, of Messrs. Robinson and Thompson, photographers of Liverpool and Birkenhead. We had hoped to have given a view of the Fountain-room, but time would not permit. We may add that the print was handed to Messrs. Waterlow and Sons, at 12.30 on Monday, and the block was in our hands on Wednesday soon after twelve. We mention this as showing how quickly photographs can now be reproduced.

We shall, of course, give a detailed account of the photographs, and the "first notice" appears this week, together with a plan of the rooms, which are so admirably adapted for the exhibition of photographs. There is a very considerable assortment of photographic apparatus, which will also be referred to at length. The principal exhibits are those of Messrs. Atkinson, Hume, Archer, Sharp and Hitchmough, Fry and Co., Wood, Miller, etc.

The special lantern exhibitions, two of which will be given every evening, will form a great attraction, and the enormous number of season tickets that have been sold is a very positive proof of how popular the exhibition will be amongst certainly the inhabitants of Liverpool and district.

On Friday night many men well known in photographic circles were present, and to our own knowledge the following cities were represented: Newcastle, Tynemouth, Hexham, Birmingham, Manchester, Glasgow, Shrewsbury, Chester, Dublin, and, of course, London. We believe representatives were present from every photographic journal, certainly three prominent editors and one sub-editor were *en évidence*. The honours of the Press were divided by Mr. Traill Taylor, of the *Journal*, and Mr. Charles W. Hastings, of the AMATEUR PHOTOGRAPHER, both gentlemen being called upon to speak in connection with the opening ceremony.

The most unique feature of the Exhibition is to be found in Mr. Ralph Robinson's "Artists at Home" series, which include the portraits of thirty-four R.A.s and A.R.A.s. These are "not for competition," but in our opinion form the finest collection of portraits photography has ever produced. We are glad to find that Mr. Robinson intends to publish them in three parts, containing twenty portraits in each part, all direct platinotype prints, published at £3 3s.



each part. In a very few years time the series will be priceless.

Much information regarding the Exhibition will be found in another column, and it only remains for us to recommend all our readers who can to pay an early visit to the Liverpool Photographic Exhibition.

OWING to the heavy calls upon our space, we are compelled to hold over our illustration, the "Seven Ages of Man," which will appear next week.

THE AMATEUR PHOTOGRAPHER 1890 Prize Slides are still earning golden opinions. We are pleased to be able to

Church Architecture," and on the 23rd inst. the annual general meeting will be held, followed at 8:30 p.m. by an exhibition of lantern-slides by Mr. Fitz Payne, Mr. Stevens, and other members.

So far as at present arranged, the following gentlemen will read papers at the Club Conference, which opens on Tuesday, April 7th, at 2 p.m.:—Captain Abney, Sir H. Trueman Wood, Mr. Joseph Pennell, Mr. C. V. Boys, Major J. F. Nott, and Mr. Lyonel Clark.

WE have had an opportunity during the last few days of talking to two members of the Executive of the Glasgow and West of Scotland Amateur Photographic Association, and hearing from them how energetically Glasgow men are



T. S. MAYNE. A. F. STANISTREET. CAPT. ABNEY. J. P. GIBSON.  
J. GALE. G. W. WEESTER.  
H. P. ROBINSON. ANDREW PRINGLE.

WILLIAM TOMKINSON.

#### JUDGES, LIVERPOOL EXHIBITION.

(BY MESSRS. ROBINSON AND THOMPSON.)

state that the few slides which were broken, owing to gross carelessness by *some person or persons unknown*, have, through the kindness of prize-winners, been replaced. Those secretaries of societies who may not have been fortunate enough to secure them, or private individuals, who may wish to have them for exhibition purposes, can now make application, giving three alternative dates after the middle of April.

WE are pleased to note that the Camera Club are now resuming active work. The first "Thursday Evening" will be on the 19th inst., when the Rev. T. Perkins, M.A., will give an illustrated lecture on "Further Notes on

taking up the exhibition; within a few days a handsome guarantee fund was raised, and although the exhibition is not to be held till September many promises of support have been received. It is the intention of the promoters to have a special branch for photo-mechanical work, for which purpose one of the members of the Executive Committee has come to London, and has interviewed all the large firms—we believe, with capital results.

OUR readers will remember that we promised an AMATEUR PHOTOGRAPHER'S *Annual*; we are glad to say that *the "Annual"* will be ready for delivery on the 16th inst. We trust it may be found a useful addition to the photographic



library; at least, we have copied no "Annual" that has been published, and we are quite confident of one thing, and that is, that the AMATEUR PHOTOGRAPHER'S "Annual" does not contain a single line that will not be of service to workers in photography, whether professional or amateur. With a promise of even a more useful "Annual" in 1892, we wait the verdict on our maiden effort.

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THE *Photographic Quarterly* for April will be well up to the preceding numbers, and will contain:—Frontispiece, "The Love Letter," by John E. Austin, which, it will be remembered, gained him a medal at the last Pall Mall Exhibition. Probable articles:—"Round Europe" (illustrated), by Cyril S. Cobb; "Teachings of a Chemical Actinometer," by Charles A. Koho, Ph.D., B.Sc.; "Papyrotint Process for Lithographing in Half-tones," by Captain A. M. Mantell, R.E.; "Toning of Images," by Clement J. Leaper, F.C.S.; "Idealism," by Fred. Davies; "The Relationship between Absorption and Sensitiveness of Sensitised Plates" (illustrated), by J. J. Ackworth, Ph.D., F.I.C.; "Memory and Imagination" (illustrated), by H. Ernest Murchison; and "The Camera's Service to Art," by J. Stanley Little, author of "What is Art?" "Art, Nature, and Photography," etc., etc.

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THE friends of Mr. Alfred Parsons, whose sketches have been so often admired in the pages of *Harper's Magazine*, rallied in force at the private view, on Saturday, of his paintings. Many artists were present, including Mr. David Murray, A.R.A., Mr. Marcus Stone, R.A., Miss Ada Bell (who, if the ladies had their rights, would add R.A. to her name), Mr. Mortimer Menpes, whose study of Japanese art is so extensive, and Mr. Alfred East, whose paintings excited so much interest recently. With Mr. George Du Maurier, the celebrated *Punch* artist, came his daughters, who are no strangers to diligent students of the pages of the "London Charivari." Mr. Geo. Meredith, who admires the scenes which Mr. Parsons depicts with all the love of a connoisseur of "gardens and orchards;" Mr. Hern, who has a name and fame in colonial art circles; and Sir Spencer Wells were also present.

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MR. MELHUISE has shown us the original drawings and specifications of the roll-holder which he invented and patented in 1855, for use with waxed paper. It is most ingenious, and Mr. Melhuish charged the holder with sufficient paper for twenty 20 by 16 negatives, and exposed them at Windsor Castle by special request, and in the presence of the late Prince Consort. The holder was a success in its time, and was used, amongst others, by Mr. Glaisher and Mr. Frank Hayes. The drawings can be seen at our office on Monday afternoon next.

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NOTE.—The very heavy calls upon our time and space have decided us to abstain *entirely* from advising as to purchase of apparatus, plates, paper, or photographic materials, which are now of so uniformly excellent a character that workers in photography can with every confidence place their orders with the many excellent firms who now cater for their wants. This will enable our editorial staff to devote far more time to advising upon questions of photographic procedure, criticising negatives and prints, whilst special attention and advice will be given upon the application of the rules of art to photography.

## PHOTOGRAPHY IN COLOURS.

THE interesting experiments of M. Lippmann as to the production of natural colours in photography, in which he has called in to his aid the phenomena of the interference of light, will naturally call attention to the subject. The interference of light was first discovered by Newton, who explained the phenomena of the colour of thin films, such as that of a film of air enclosed between two glass plates, or of the film of a soap bubble, or of a thin film of oil on the surface of water. We do not propose to enter into any scientific explanation as to the interference of light. Speaking briefly and in plain language, the colours of thin films are caused by the reflections from the inner surface of the film "interfering" with or extinguishing one or other of the coloured rays of the light reflected from the outer surface of the film, and therefore at this point we see the hue or colour tint which is formed by the union of the remaining coloured rays; this is, of course, supposing that the illumination is heterogeneous white light. If, on the other hand, we use a homogeneous or monochromatic light as the illuminant, we get alternate coloured and black bands, as, there being but one coloured light, the rays of light from the inner surface can only "interfere" with or extinguish the same coloured rays from the outer surface, hence we get no light or black bands.

The various phenomena to which interference of light gives rise are (1) the colours of thin films or popularly so-called Newton's Rings, (2) diffraction, with its exquisite phenomena of gorgeous colouring, including the so-called diffraction spectrum obtained by means of a grating, (3) the coloured fringes due to interference in the polarization of light. To those of our readers desirous of following up this subject more closely, reference must be made to the more advanced work of Young, Fresnel, Tyndall, etc. Nature frequently makes use of the phenomena of interference for the production of some of her most gorgeous colour effects; thus we find the interference of light producing the colours on certain feathers, as on a peacock's tail, the colours of mother of pearl; and the most brilliant and sparkling of all nature's living jewels, the humming-bird, owes its brilliant hues to the same effect, which are, perhaps, only rivalled by the beauty of some small beetles. The iridescence of many metallic substances is due to the same cause; and the finest of all gems, so far as regards colour, the opal, which bears such a bad name, gains its colours from interference.

The transition from the opal to opalescent media is but natural, and although it has been disputed that many of the effects we are about to discuss are due to interference, it is now generally accepted that such is the case; the subject being fully discussed theoretically by Brücke in Pozen-dorff's "Annalen," and Bezold in his well-known work, "Farbenlehre," to which our readers must refer. All states of matter, liquid, solid, and gaseous, exhibit this phenomenon. Thus, to take an example which may occur in landscape work, a column of thin smoke from a chimney will appear bluish as long as it is against a dark background, such as some trees, but as soon as it rises so as to show against a white cloud or bright sky, it becomes brownish yellow. Another instance, for indoor workers: an old oil painting frequently appears, especially in any dark-brown shadows or parts, as though covered with a blue haze or mist; this is due to innumerable cracks in the varnish. The remedy for this, or that usually employed by the photographer, is the use of an absorbent media, such as a yellow screen, which absorbs the blue reflected light, which extinguishes the detail. The picture restorer places his picture face downwards over hot alcohol, and thus fills up the cracks by swelling of the



particles of pigment and varnish consequent on absorption of the vapour of the alcohol. Another natural effect ascribed to the same cause is that of sunset and other effects of lighting. Our atmosphere is filled with innumerable fine particles of matter which never settle down and which are never removed by rain; these fine particles reflect blue light, but the light which passes through them is yellowish, and Brücke gives the following experiment to prove this. He dissolved one part of gum mastic in eighty-seven parts of spirit, and then added this solution gradually to water which was being vigorously stirred. The water when looked at or through, appears white; that is to say, unless of very great depth, the light is transmitted and reflected unchanged in colour. Now let us stir the water vigorously and add a drop or two of our mastic solution, and immediately the reflected light has a pale-bluish tinge, the transmitted light is a very pale lemon yellow; we add a little more resin solution, and the colours become deeper and deeper with every addition, till finally the yellow of the transmitted light becomes orange, then red, and, finally, no light is transmitted at all. Now we have only to consider our atmosphere as the vessel of water; we already have the suspended particles of matter answering to the resin; all that we want to do is to increase the number of particles. This we cannot do, but we may so change the direction or path of the ray of light that it shall pass through a greater thickness of air, and consequently meet with a greater number of particles, and as the position of the sun at midday is, we will assume, fairly upright above us, it stands to reason that the air thickness for the light to travel through is not so great as when very low down on the horizon; therefore we find our pale-blue light gradually becoming a pale lemon, then a full yellow, then orange, then orange red, and red. Surely, now we should get darkness? Not quite, though we still get the effect of mixing the deep blue reflected light of space with the transmitted red light, and the result is purple, and as the red fades more and more, the shades become more purplish blue, till finally we get a bluish grey or deep blue, according to whether the moon shows its light or not. The action of clouds upon this changing play of lights we have not considered, and all the changes may not be quite so regular or even as we have pointed out, but the above are the principal tints to be observed in a sunset. Let us turn again to the landscape and trace the effect of suspended air particles and suspended aqueous vapour with regard to our photographic retina or sensitive film. We all of us know that every object in the landscape reflects certain coloured light to the lens, and as the objects recede further and further from the lens, there is an ever-increasing thickness of air and suspended particles which reflect more and more bluish light, which mingles with that reflected from the objects themselves, modifying the effect of their particular colours, and modifying the result on the sensitive film. Let us take a range of distant mountains; the layers of suspended particles will reflect considerable bluish light, and this light entirely overpowers or extinguishes the actual reflected light from the objects on the mountain, so that our mountains are considerably more exposed than near objects, the dominant colours of which are not altered by any light from suspended particles. As the bluish reflected light is very near in tint to the pure sky tint, it is a great deal more actinic than the actual or real coloured light from the mountains, hence the contrast of light and shade is reduced, whilst in near objects the light and shade remains distinct and sharply defined, and hence we get our distance over-exposed and our foreground under-exposed, unless we are careful to so regulate exposure and development to give harmonious and truthful effects,

which shall be more nearly allied to those we see with our eyes, which are not so sensitive to the blue rays as the sensitive film.

M. Lippmann has relied on suspended particles, as it were, to give him his colours, and it is obvious that to obtain certain colours at will, he must be able to so determine the thickness and deposition of his particles as to interfere with or extinguish all rays but the one he wants; by no means an easy task, and this is the point where will lie the great difficulty in practical application of his process. The statement that when viewed by transmitted light, the results are so-called negative, that is, show complementary colours, is easily understood from our notes above, as, if the particles of silver reflect one particular coloured ray, the light that is transmitted must obviously be the complementary colours. Another difficulty which M. Lippmann has met with is the formation of an emulsion so fine that no "grain" shall be visible under the microscope. Now Brücke found that in his experiment with alcoholic solution of mastic and water, the suspended particles were sometimes so fine as to evade detection by the most powerful microscopes, and remained suspended in the water for months and months. We have here a hint as to the formation of an emulsion suitable for his experiment; why not make a somewhat thin solution of bromised albumen or gelatine, stir it vigorously, and drop into it either a very dilute alcoholic solution of nitrate of silver, or a dilute aqueous solution of the same salt? From a few experiments we have made in this direction, this method of procedure will give as fine an emulsion as is possible to obtain—far finer than anything ever yet produced commercially.

It is rather a curious coincidence that it is just about a year since we had an announcement of the discovery of photography in natural colours by M. Veresz, a Hungarian, and also a year since Captain Abney's oracular statement that photography in natural colours, either by a printing-out or development process, was an utter impossibility, which statement appeared in the *Daily Graphic* of March 22nd, 1890, and was also repeated at the British Association for the Advancement of Science and the Camera Club Conference.



## Letters to the Editor.

### A TRAVELLING PORTFOLIO CLUB.

SIR,—When I was a learner of Pitman's phonography I was prone to encourage an institution known as the Ever-circulating Magazine. The contributors consisted of a conductor and ten or fifteen members, whose names and addresses were inscribed on the first page, who received the magazine by post, retained it for three days, inserted an article, made remarks on certain blank pages provided for the purpose, and sent the little journal on its way. In a month or six weeks, the magazine, having returned to the conductor, was again sent round, and each member on its arrival removed his former article and replaced it by another.

Through this medium I saw many different kind of phonography—good, bad, and indifferent—the former stimulating me to higher achievements, and the latter teaching me what to avoid.

Is there such a thing in the photographic world, and if not, could not the idea be copied with advantage? The manner of adapting the ever-circular principle to photography is simple, and a circle of, say, twenty earnest workers, all striving to excel, could not fail to produce a valuable magazine. Perhaps you will consider this suggestion worthy of prominence in the pages of the *AMATEUR PHOTOGRAPHER*.—Yours faithfully, WM. BAIRD.

Rathdowney, Ireland,  
March 4th, 1891.

(There are already a number of postal photographic clubs on these lines in existence.—ED. AM : PHOT.)



## "PHOTOGRAPHIC REPORTER."

SIR,—I must congratulate you on the very successful reproduction of my photograph "The Last Load," which appears in the current number of the *Reporter*. Considering that it is from a negative copied from a print, I think it is all that can be desired. One or two of my friends who have seen it have expressed the opinion that it is one of the best reproductions which have appeared.

## HAND-CAMERA WITH SWING FRONT.

Referring to a short paragraph which appeared in last week's *AMATEUR PHOTOGRAPHER*, expressing a want for a hand-camera with a swing front, I may mention that I have designed some time ago the very thing your correspondent calls for. Ordinary hand-cameras on the market can only be put to a very limited use, as anyone desiring rather to produce one or two *pictures* in a year than expose so many hundred plates, very soon finds out.

I have just completed provisional protection for patent, and am arranging to place cameras on the market in about one month's time.

My camera can be used for any lenses, from about 3½ in. to 8 in. Has every movement which an ordinary camera has, at the same time it can be used on stand, in the hand, or for daylight enlarging.—Yours faithfully,

ALG. BROOKER.

March 8th, 1891.

\* \* \* \*

## PHOTOGRAPHY IN COLOURS.

SIR,—I have at last seen, with great pleasure, the realisation of the theory I have held for some time, in the results produced by M. Lippmann, in reference to colour photography. It may not be out of place to mention that I and my brother have been for some time experimenting in this line, and have tried in most respects the same procedure as M. Lippmann's, with the exception that we used a dry-plate film backed in optical contact with a mercury mirror, and obtained no satisfactory result. I hope soon to be able to give you any results which may accrue from our experiments. I am about to try the substitution of metal plates (in the form of burnished silvered copper plates) instead of glass, as I wish to test the intensity, etc., of electric disturbance produced by the action of light, and also by a process of electrolysis (which I hope to describe later on) to so depose the coloured layers of silver on this metallic plate, that the result would be a coloured image, built up almost entirely of metal, and therefore permanent; so in these respects glass would not answer. There is no doubt that the use of a metal plate to obtain a coloured (positive) image direct, will be eventually found to be the most satisfactory from which duplicates could be obtained by a process of transfer on glass or otherwise. Going back to the early days of photography, viz., daguerreotypes, no one can fail to see, after a critical examination of one of these productions, a suspicion of colour, unless he be colour-blind. In a case described a few months back in the *AMATEUR PHOTOGRAPHER* where a gentleman obtained a vivid photograph in true colours, on a daguerreotype plate; having made the exposure to the subject during an intense flash of lightning, I think this was undoubtedly due to the intensity of light acting on the dull silver plate, thus bringing about the same effect as if it were a bright mercury mirror with a weaker light, and so "interference" was set up, as in M. Lippmann's process. In ordinary daguerreotypes, taken under normal conditions, I think this suspicion of colour is partly due to the silvered metal plate and also to the bichloride of mercury used in the intensification of the image; both these tending in a minor degree to set up "interference" of the wave-lengths of light as described by M. Lippmann. I hope soon to obtain some tangible results from experiments based on the electro-magnetic theory of light (proposed and proved by Maxwell) which I venture to think is the key to colour photography. It is easy to understand now how the colours are produced by M. Lippmann's process, and as far as I glean, the colours, as yet, can only be reproduced through coloured media (as glass) or from the solar spectrum, where the colours are received in a dark-room; but I doubt whether we shall by this process be able to take colours from nature, where we have the interference of actinic light between the coloured object and camera; the two cases also being different in that, in nature, coloured objects are so by reflection and not transmission; in other words, an opaque coloured object is such that it absorbs all the solar rays, except that which it reflects by its molecular composition, and which we call its colour. Therefore to produce

these colours satisfactorily, we must have a means of cutting off all rays, actinic or otherwise, which come between the object and sensitive plate. At first sight this would appear an insuperable difficulty, but I venture to suggest that it could be brought about by the aid of a *black* polarising mirror (as used in photographing clouds), so that, in fact, we should photograph the image as reflected by this mirror; or else we should have to photograph the object through coloured (transparent) screens, agreeing in colour to those of the solar spectrum; the exposure being proportional, through each colour, to the actinism of that colour; so that when the object had been photographed through each consecutive colour (on the same plate) beginning with the lowest on the scale in actinism, the plate would have had the correct exposure. I hope all enthusiastic amateurs will help in any way by combining to throw more light (I should say colour) on this most interesting subject, and, by publishing their results from experiments in this direction, so help to bring about practically, as an accomplished fact, "photography in natural colours," and thus raise art to the highest standard attainable.—I am, Sir, yours faithfully,

D. G. GORDON.

16, Weighton Road, Anerley, S.E.

SIR,—I notice an *a priori* objection to "photography in colours," signed G. Lacy.

Granted that colour is "purely subjective," still whatever the qualities of certain surfaces may be which excite the impression of colour in our sense of sight, there is not, and there cannot be, any *a priori* impossibility in those qualities being so far imitated on other surfaces as to produce similar impressions on the senses. Suppose that the surface of a gelatine plate can be made somehow to reflect the same rays to our eyes which coloured objects in nature reflect, clearly the thing is done. A person will see the one just as he sees the other; if his sight is normal he will see both natural objects and their representation as coloured; if he is colour-blind he will still see them alike, though, for aught I know, red and green may appear to him as slightly different shades of brown.

Mr. Leigh's argument, if it would hold good, would equally prove the impossibility of all painting.

F. W. STOW.

Aysgarth Vicarage.

\* \* \* \*

## STEREO MOUNTS.

SIR,—The paper stereographs entered by me, and which were awarded second prize in the late competition, have been alluded to on several occasions in your columns; one report very flatteringly asserting that "if they had been transparencies they would have been perfection;" the fact being that these card slides were purposely entered, to see what chloride paper could do against glass in a public competition; the result confirming my opinion that Obernetter and Aristotype paper, glass dried, are nearly, if not quite, as effective as transparencies.

In answer to the query of the Hon. Secretary, Stockton, the cut-out card mounts were supplied by Way, Victoria Parade, Torquay. Everything, of course, depends upon the exact distance between centres, a difficulty I have found insurmountable with London dealers. If there is any merit in these slides it must lie in these mounts, which are themselves rendered stereoscopic by the simple process (found out for myself, but no doubt well known to the old stereographers) of arranging the twin prints a shade wider than the apertures.

Mentone, March 8th.

LEIGH PHILLIPPS (Major.)



**Zeiss Microscopic Catalogue.**—We have received from Mr. Harthank, of 174, Charing Cross Road, a catalogue of microscopes and microscopic apparatus manufactured by Carl Zeiss, the well-known optician of Jena, and we should strongly advise all our readers who are working, or intend to work photo-micrography, to apply for one of the English catalogues, which will be ready shortly. The one before us is in German, and may be considered as not only a catalogue but a text-book on the special articles for which Herr Zeiss is so famous. We have here an explanation of the special apochromatic objectives and the principles on which they are constructed. The projection eye-pieces are treated in the same way, and tables are given showing the magnifying powers it is possible to attain with certain objectives and eye-pieces. The special apparatus for testing micro-objectives, stands, tables, condensers, etc., are also included, and a very complete and instructive explanation of the apparatus for photo-micrography, with the usual smaller requirements of microscopists.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER VI.

Fig. 11. The plan of composition I have here taken up is in the form of a diamond; which we find often adopted, either as a complete group, or as forming part of a more complicated arrangement. In commencing a composition, I have mentioned, "that it is of importance to mark in those points most necessary to our purpose." For example, when a story is to be told, the heads and hands, the seats of action and expression, are often referred to each other for the completion of form or extension of light; as by such means the eye of the spectator is led to the commencement and operation of the incident. After arranging the principal points, what are called "the secondary" require the greatest consideration; whether for the repetition of the lines, extension of the form, or conduct of the light and shade. Sometimes we are actuated by our requiring a second or third group for the better illustration of the story, which naturally leads us in the direction that affords us the greatest space; sometimes by the principal group demanding a considerable portion of the ground for a mass of shadow, beyond which a strong point is required, as a link of communication between the figures and the background. By making this point the strongest of a secondary group of objects, either from its size, lights, or darks, the eye is carried into the most remote circumstances, which become a

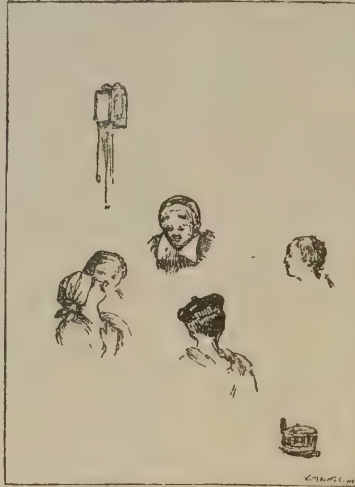


FIG. 11.

part of the whole, from the principal group being made to depend upon such point for the completion of its form, the extension of the light, or the repetition of colour.

Fig. 12. — In designs constructed upon this plan (especially of the Dutch School), we generally find the lower part of the form strongly pronounced, either by colour, or by light upon a dark ground, or vice versa: this gives the group a firm foundation, and also enables the artist to



FIG. 12.—A OSTADE.

keep the other objects in their proper situations as to distance from the eye. I wish particularly to direct the student's attention to this particular, as a doctrine, founded upon the rays of vision, has been attempted to be established, viz., that objects as they recede from the centre of the picture, either to the sides or bottom, ought to be deprived of part of their force of light and shade and colour.

This is neither nature nor art. If the subject requires those objects to be kept subordinate, true art does not deprive them of their natural force, by robbing them of their lights, darks, or colours; it renders them less obtrusive by the ground which surrounds them, or substitutes other objects of a less attractive quality.

Fig. 13.—By making the circumstance from which the story springs a strong point (either from situation, force, or colour), and surrounding it with those objects more immediately connected and most illustrative of its effects, the picture explains itself at a glance; which is one of the strong distinctions of painting from poetry,—the one proceeding in a circuitous route to hide the denouement and keep hold of the attention, the other proclaiming instantaneously the beginning and end of the story. I do not mean that the circumstance ought always to occupy the centre, any more than that the hero should always occupy the centre; but, as it is of use to explain the cause of his action and expression, it has, in my mind, a prior claim to consideration.

It has been said that emphasis is impossible in a photograph. If this were true, photography could have little claim as one of the fine arts. It would mean that the photographer had no control whatever over his subject. This misleading statement is refuted every time a figure is placed, with knowledge, in a landscape for the purpose of strengthening a point or emphasising a situation. One method of emphasising a point, or, in other words, giving the key-note to the picture, both as regards the masses and light and shade, is to add a figure or figures that shall have

points of darker dark and lighter light than can be found in other parts. This emphasis will often produce interest by the subject, harmony by collecting scattered lights and lines to a focus, and atmosphere by giving a measure of highest and lowest tones, also by contrast, and all this to a scene that was otherwise flat and common-place.

Fig. 11 deals with the points that should be more or less prominent in a group. A knowledge of the principle—which is only another of the many ways to securing variety—may also be of use in the composition of a single figure, as applied to the points of interest given by the hands, head, etc.

Figs 12 and 13 are sufficiently explained by the text, and are examples of subjects which may be successfully attempted by the photographer.

Burnet often trenches on what some think are modern discoveries, and others denounce as modern heresies, but which are as old as the hills. I wish particularly to call attention to his remarks on fig. 12, in which he incidentally alludes to, and strongly condemns, something very like what is now called impressionism. I agree with, and have always endeavoured to enforce, his striking opinion that "this is neither nature nor art."

(To be continued.)



FIG. 13.—BURNET.



## Photo-Micrography.—VI.

BY ANDREW PRINGLE.

SINCE writing Chapter V. I have seen what appears to me a most extraordinary account of a discussion on the use of the ocular, the discussion being held at a technical meeting of the Photographic Society of Great Britain. The speakers seemed to be unaware that—I put it boldly—all the best work of the present day is done with the projection ocular. I cannot name a single worker really accepted as being in the van of photo-micrography who does not use the ocular. Mr. Nelson, Mr. Comber, Mr. Smith, Mr. Curties, Dr. Bousfield, Dr. H. van Heurck, Dr. R. Zeiss, Dr. Pfeiffer—all these use it, I believe, always over the lowest power work. (I do not know how the matter stands in America, where there are good workers.) The use of the projection ocular is not only a very great convenience, but a very great advance towards the best results. I would not dream of working without a proper ocular, provided my required magnification was over, say, 20 diameters. But fairly good work can be done without the ocular, provided the objective is thoroughly corrected for photography, up to, say, 500 diameters with a one-twelfth, or a little more with a one-twentieth. But the same magnification will be decidedly better obtained with a one-eighth or one-twelfth, and a low-power projection ocular. For low-power work up to, say, 100 diameters and with easy objects, good results can be got without the ocular, but again, I believe better results will be got with a proper ocular and a proper objective.

### EXPOSURE.

It is not uncommon to see in books and in papers tables given to help the worker to judge of the exposure required. If I could compile or find a table which would be of any real use at all, I would gladly give it here. Everything depends on everything else. Exposure increases directly as diameters of magnification, and that is about the only law that can be laid down to be of any use. Exposure decreases as aperture increases, but we never, or very rarely, are in a position to measure the aperture we are using.

A plan which I found very useful may be recommended here. The first desideratum (in order of practice) to be attended to is the obtaining of a white background in the positive, *i.e.*, a dense black ground in the negative. Sometimes this cannot be got, but at all events we should, in nearly all cases, try to get it. So one of my earliest works was to find and to tabulate the minimum exposure necessary with a given light, a given condenser at a given aperture, and with a given objective without ocular, in order to get a dense black negative background on a given plate with no object in the stage, or else with a pure black and white object as a mounted diatom. It took me some hours, but I managed to tabulate a table of this sort for each of the objectives I then possessed. Here then I had my minimum exposure at a certain magnification; if I increased or diminished magnification, I knew still the minimum exposure; for in practice it will be found that it does not matter by what means we alter our magnification, by change of camera-stretch or by eye-piecing, the exposure always follows the magnification.

Now I surely need not tell any photographer that alteration of light, of plate, of colour or density of object entails alteration of exposure. If I could give a table of all these, then I could and would give a table for exposure. I trust myself, and I strongly urge my readers to trust, not to any

table, but to a careful scrutiny of what happens to the plate during the process of development. When we come to that, I shall very carefully describe the appearances under development when error of exposure has been made; by this method I hope and believe the reader will learn, and quickly, to regulate exposures for himself. After a very large amount of practice, and with fair knowledge of all the stains commonly used in such work as that which I deal with, I do not often make a serious mistake in exposure; but confront me with some new stain or some abnormally treated preparation, and I have to judge by development just as I desire my most unpractised reader to do. An ingenious method of arriving approximately at the required exposure for any colourless object may be found in a little book by Dr. E. C. Bousfield (*"Guide to Photo-Micrography,"* W. Kent and Co., London). Dr. Bousfield determines the force of the light at the plane of the sensitive plate, by means of the figured screen of a Warnerke sensitometer, which he examines while held in that plane. He determines first the highest number on the screen which he can plainly make out, and then, assuming the plate-sensitiveness to be known, he calculates the necessary exposure, and he puts his calculations in the form of a table which forms part of his book. Still, nothing like an accurate allowance for colour can be made by this method, and I again urge the worker to learn exposure by exposing.

Something must be said about the plates to be used. I venture to distinguish between two classes of subjects which require to a certain extent distinct treatment: (1) Subjects with strong contrasts of density, colour, thickness. In this class we find a large number of subjects usually treated with low powers—coarse diatoms, insects, pathological and physiological sections not very thinly cut. (2) Subjects wanting in photographic contrast, such as very fine diatoms, very thin sections, parasites, and low forms of life unstained or highly stained and mounted in clear solutions or gums, faded stains of all kinds. For subjects presenting strong contrasts, either of density or actinicness, the proper kind of plate is undoubtedly one not prone to great density, one of considerable sensitiveness, for the exposure is sometimes protracted, one giving plenty of gradation, for the danger with such subjects is want of gradation. A good plate of the kind used in portraiture may be trusted to meet these requirements. For the pale, pellucid, washed-out or very thin subject, we require a plate by no means very "rapid," with power of yielding great density, with plenty of emulsion on the glass and plenty of silver in the emulsion. A so-called "landscape" plate, thickly coated if possible, or even a good "lantern" plate will be found the "best plate" for this class of work.

But the photo-micrographer who means business may at once take to "colour-correct" plates, or "orthochromatic," or "isochromatic;" he may very easily treat plates for himself, or he may buy his plates ready colour-sensitised. I must say that the colour-sensitiveness in commercial plates, so far as I have experienced, is not carried to any very high point, still their comparative sensitiveness to yellow is quite noticeable, and their qualities in this direction can be eked out by the judicious use of yellow and other screens. I may say that I use more of the isochromatic plates than of all others put together, yet I seldom use them without a yellow screen, and I sometimes use four and even five or six screens. I am quite prepared to admit, as a writer on this subject has said, that colour-correct plates and screens are not primarily intended to help us to contrast; at the same time they often are the only means by which we can get contrast, and there is therefore good reason for us to use them. Neither black and white objects, nor objects *well* stained with red, yellow, blue, violet, or indeed any good stain, require either colour-

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



correct plates or screens, but when we have to deal with multiple stains, or poor stains, or faded stains, then we do well to take to colour-corrected plates and, if necessary, screens.

There is nothing mysterious or terrible in the operation of colour-correcting plates for ordinary purposes. I think nothing of treating several dozens of quarter-plates during any spare hour or two. With half-a-dozen quarter-plate dishes a great many plates can be done in an hour. I use any moderately slow gelatine-bromide plate of commerce, Thomas' landscape, Wratten's "green label," etc. Make a solution, 1 part to 1,000 of distilled water, of "Erythrosin B," of the *Badische Anilin und Soda-Fabrik*. See that you get the proper article, which is *not fluorescent* in solution. Make also a dilution of liquor ammoniæ 1 part, water *dist.* 9 parts. Bathe each plate about two minutes in—

Erythrosin (1 to 1,000 as above)	..	1 part.
Ammonia (10 per cent. as above)	..	1 "
Water, <i>dist.</i>	.. .. .	8 "

Do not wash after this, but dry in total darkness. Yellow light in the dark-room is not admissible. This treatment will increase the *general* sensitiveness of the plate nearly three times. The ammonia may be omitted, in which case the relative sensitiveness to yellow will be relatively increased, but the general sensitiveness will be several (four or five) times decreased. Cyanin used exactly as the erythrosin will considerably increase sensitiveness to red, but it is very awkward to work with on that very account, and in my experience the general quality of the plate is damaged; but for subjects wholly or in large proportion red, this system is of great value. Plates treated with ammoniacal erythrosin ought to keep for a week, with plain erythrosin for many weeks, with ammoniacal cyanin not many days; of cyanin alone I have little experience, as I only use cyanin *pro re nata*.

When we come to consider special treatment of special subjects, I shall have more to say about orthochromatic matters.

(To be continued.)

## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 153.)

AMMONIUM neutralises acids and forms the compounds known as the *ammonium salts*.

EXPERIMENT 107.—Dilute 25 c.c. of strong ammonia solution with four times as much water, and gradually add dilute hydrochloric acid, with constant stirring, until the liquid just reddens blue litmus paper. Concentrate by evaporation, and allow to crystallise. The product is *ammonium chloride*,  $\text{NH}_4\text{Cl}$  ( $\text{NH}_3 + \text{HCl} = \text{NH}_4\text{Cl}$ ); dry it on filter paper. Observe that it closely resembles common salt (sodium chloride) in appearance, and has a very similar taste. Dissolve some in water and test for a chloride as in Expt. 72, and for ammonia by heating with caustic soda as in Expt. 101.

EXPERIMENT 108.—Neutralise a similar quantity of ammonia in a similar manner with dilute nitric acid, concentrate and allow to crystallise; the product is *ammonium nitrate*,  $\text{NH}_4\text{NO}_3$  ( $\text{NH}_3 + \text{HNO}_3 = \text{NH}_4\text{NO}_3$ ). Observe that it resembles potassium nitrate (Expts. 74 and 77) in appearance; test it for ammonia.

The relation between the ammonium salts and those of potassium and sodium is shown by the following formulæ:—

	Chloride.	Bromide.	Nitrate	Sulphate.
Sodium	$\text{NaCl}$	$\text{NaBr}$	$\text{NaNO}_3$	$\text{Na}_2\text{SO}_4$
Potassium	$\text{KCl}$	$\text{KBr}$	$\text{KNO}_3$	$\text{K}_2\text{SO}_4$
Ammonium	$\text{NH}_4\text{Cl}$	$\text{NH}_4\text{Br}$	$\text{NH}_4\text{NO}_3$	$(\text{NH}_4)_2\text{SO}_4$

The group  $\text{NH}_4$  behaves like the single elements potassium and sodium, and replaces the basic hydrogen of the acids, forming salts. This group is called *ammonium*; it is a *compound radicle*, i.e., a group of elements that behaves like a single element, and can be transferred entire from one compound to another, like the potassium and the silver in Expt. 81.

EXPERIMENT 109.—To a solution of 5 grammes of ammonium bromide add a solution of 8.5 grammes of silver nitrate, filter off the precipitate of silver bromide and concentrate the filtrate by evaporation. Ammonium nitrate will crystallise out, identical in appearance and properties with that formed in Experiment 108; test it for ammonia. The equation representing the reaction is  $\text{NH}_4\text{Br} + \text{AgNO}_3 = \text{NH}_4\text{NO}_3 + \text{AgBr}$ .

Ammonium has not been isolated in the free state, but it occurs in so many compounds that it is often represented by the special symbol Am; thus,  $\text{AmBr}$ ,  $\text{AmNO}_3$ ,  $\text{Am}_2\text{SO}_4$ , instead of  $\text{NH}_4\text{Br}$ ,  $\text{NH}_4\text{NO}_3$ ,  $(\text{NH}_4)_2\text{SO}_4$ .

Ammonia also give rise to another important series of compounds, some of which are frequently met with. They are called *metallic ammoniacal derivatives*, or, sometimes, *ammonio compounds*.

EXPERIMENT 110.—To some silver nitrate solution add dilute ammonia solution drop by drop, until the brown precipitate which forms is just redissolved. The liquid now contains *ammonio-silver nitrate*  $\text{AgNO}_3 \cdot 2\text{NH}_3$ , which can be obtained in crystals if the solution is allowed to evaporate spontaneously at the ordinary temperature.

EXPERIMENT 111.—To some silver nitrate solution add some hydrochloric acid, allow the precipitate of silver chloride to settle, and pour off the clear liquid. Now add some dilute ammonia to the precipitate; it will dissolve, and the solution contains *ammonio-silver chloride*,  $2\text{AgCl} \cdot 3\text{NH}_3$ , which can likewise be obtained in crystals.

EXPERIMENT 112.—To a solution of copper sulphate add dilute ammonia solution drop by drop; a bluish-white precipitate forms, but afterwards dissolves in excess of the ammonia, forming a deep blue solution of *ammonio-cupric sulphate*,  $\text{CuSO}_4 \cdot 4\text{NH}_3$ .

Note carefully that these ammonia compounds are quite distinct from the ammonium compounds. They will be referred to again under the different metals.

*Hydrazine* or *Amidogen*,  $\text{N}_2\text{H}_4$ , is a gas with a smell somewhat like that of ammonia, is very soluble in water, and has a strong alkaline reaction, neutralising acids and forming a special series of salts.

*Hydrazoic acid*  $\text{N}_3\text{H}$  is also a gas, soluble in water, and is liable to decompose explosively; it has acidic properties. Both these compounds can only be obtained by special and difficult reactions.

### COMPOUNDS OF NITROGEN WITH OXYGEN AND HYDROGEN.

Nitrogen and oxygen form five distinct compounds; nitrogen, oxygen, and hydrogen form three compounds, all of which are acids.

*Nitric Acid*,  $\text{HNO}_3$ , is the most important of them all, and from it the other seven compounds can be prepared. It can be made on a small scale by gently heating potassium nitrate with an equal weight of strong sulphuric acid in a retort arranged as in fig. 23. Nitric acid distils over and collects in the receiver, the heating being stopped when the retort begins to be filled with orange-brown fumes. The reaction is  $\text{KNO}_3 + \text{H}_2\text{SO}_4 = \text{HNO}_3 + \text{KHSO}_4$ . On a large scale the acid is made in iron retorts from sodium nitrate and sulphuric acid, the reaction being



$2\text{NaNO}_3 + \text{H}_2\text{SO}_4 = 2\text{HNO}_3 + \text{Na}_2\text{SO}_4$ . In an iron vessel the materials can be heated to a higher temperature than is practicable in a glass vessel, and one molecule of sulphuric acid will decompose two molecules of the nitrate.

Nitric acid, when quite pure, is a colourless fuming liquid, which rapidly absorbs moisture from the atmosphere. It boils at 86 degs. C, but when heated or when exposed to light it partially decomposes into nitrogen peroxide ( $\text{NO}_2$ ), water and oxygen, thus  $2\text{HNO}_3 = 2\text{NO}_2 + \text{O} + \text{H}_2\text{O}$ . Part of the peroxide remains dissolved in the acid, and gives it an orange-yellow colour. The tendency to decompose in this way decreases when the acid is diluted with water, and a mixture of 68 parts by weight of real  $\text{HNO}_3$ , and 32 parts by weight of water, boils without change of composition at  $120.5^\circ$  under the ordinary atmospheric pressure. The mixture has a specific gravity of 1.42 at the ordinary temperature. When strong nitric acid is mixed with water, there is considerable development of heat.

Nitric acid is highly corrosive, producing very painful wounds if it falls upon the skin, and it rapidly attacks and oxidises many forms of organic matter. If the strongest acid is dropped upon dry straw, etc., so much heat is liberated by the chemical action that the straw takes fire. Weaker acid still acts energetically, staining the skin and other organic matter, yellow or orange, and oxidising them.

The efficiency of the nitric acid as an oxidising agent depends on the fact that it contains a very large proportion of oxygen (48 parts out of 63) in a somewhat loose form of combination. Upon some compounds nitric acid exerts a *nitrating* and not an oxidising action, hydrogen being removed from the substance and converted into water, whilst the group  $\text{NO}_2$  takes its place and forms a *nitro*-compound. Benzene,  $\text{C}_6\text{H}_6$ , for example, yields *nitro-benzene*,  $\text{C}_6\text{H}_5\text{NO}_2$ , thus  $\text{C}_6\text{H}_6 + \text{HNO}_3 = \text{C}_6\text{H}_5\text{NO}_2 + \text{H}_2\text{O}$ . Only strong nitric acid acts as a nitrating agent.

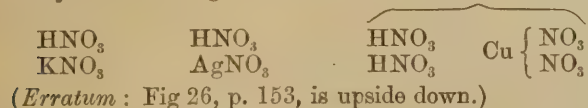
Nitric acid attacks all metals except gold and the metals of the platinum group, converting them, as a rule, into nitrates, though in a few cases, *e.g.*, tin and antimony, the action of the strong acid yields an oxide and not a nitrate.

EXPERIMENT 113.—To some pieces of tin add some strong nitric acid; energetic action takes place, orange-brown vapours of nitrogen peroxide,  $\text{NO}_2$ , are evolved, and a white residue of hydrated tin oxide,  $\text{SnO}_2$ , remains. The reaction is  $4\text{HNO}_3 + \text{Sn} = 4\text{NO}_2 + \text{SnO}_2 + 2\text{H}_2\text{O}$ .

EXPERIMENT 114.—Pour on some copper some strong nitric acid previously diluted with an equal quantity of water; energetic action takes place, nitrogen peroxide is again formed, and a blue solution of copper nitrate  $\text{Cu}(\text{NO}_3)_2$  is obtained. Pour off the liquid from any undissolved copper and allow it to cool; if no crystals separate, concentrate the liquid.\* Copper nitrate will separate in blue needle shaped crystals.

EXPERIMENT 115.—Perform a similar experiment with some silver, and crystallise the silver nitrate  $\text{AgNO}_3$  that is formed.

The relation of the nitrates to nitric acid will be made clear by the following formulæ—



We are informed that the partnership between Messrs. Fry and Hayman has been dissolved. Mr. Fry will carry on the business on his own account. No change will be made in the style of the firm.

\* The concentration must be done in the open air or under a chimney if no proper draught cupboard is available, since the vapours of nitric acid are highly corrosive and injurious.

## The Illustrated Novel of the Future.

By CHARLES E. PEARCE.

MR. CARMICHAEL THOMAS, in his recent lecture at the Society of Arts, stimulated curiosity. He alluded to the latest American "method" of illustrating a story. It consists of the substitution of the photographer for the artist. The manuscript, we are told, is placed in the hands of the photographer, who selects suitable persons to represent the author's ideas, and photographs them as nearly as he can in the pose and with the surroundings described in the text. At least, this is the theory. Thanks to the enterprise of the proprietors of the *Cosmopolitan*, a New York illustrated monthly magazine, copies of which have been sent to this country, an opportunity presents itself of judging how far theory is borne out in practice.

The story is of the "intense" school, and the first illustration, taken in conjunction with the descriptive matter, suggests possibilities which under certain circumstances are likely to cause a sensitive sitter some embarrassment. We have given to us the portrait of a young man of fairly regular features and of pleasing expression, but in no way remarkable. The portrait is discovered in a sale room by the heroine, aged eighteen, with a heart "steeped in sorrow, as an opal's fire is clouded with pearly mist." A damsel so peculiarly constituted would naturally see more in a photograph of a young man than would the average common-place person. Accordingly, the face possessed her "by its show of virile strength. Eyebrows, eyes, nose, mouth, through each of these features ran a sense of dominating force, firm as a bar of iron." We are further told that "the purpose in the clear eyes and chiselled lips halted just this side of defiance. A Roman youth of the imperial body-guard who had given himself to Christ with the impassioned fidelity of those early days might have looked like that, as the gaunt lion sprang towards him." This almost takes away one's breath, and a mental collapse is imminent, when we read that "as the nostrils of the war-horse dilate to the scent of battle, the clear-cut mouth seemed quivering on the verge of a smile."

A marvellous face indeed! There was an infinite deal in Lord Burleigh's nod, but it cannot compare with what the damsel of the sorrow-steeped heart found in the youth with the expression of a bar of iron. What a thrill of pleasure must have gone through the sitter when he read the glowing words! How he must have rushed to the mirror to gaze upon his dilating nostrils and quivering mouth! But further surprises are in store for him. The gentleman who posed for the hero has unmistakably short legs. The next photograph shows this beyond the probable, possible shadow of doubt. But no one who has short legs likes to think they are short, and the sitter will try to believe that the photographer was wrong, and the author right, when he wrote, "His long legs were stretched out before him." In this photograph the reader is made aware that the photographer has his own notions about the story as well as the author. While the latter says of the youth with the dilating nostrils, that "his hands were thrust in his trousers' pockets and his square sinewy shoulders were pressed against the back of the chair," the former insists that he should have his hands clasped behind his head. Thus has he been photographed, and in this pose he gazes upon a picture, compared with which Fuseli's nightmare creations based upon suppers of pork chops, must sink into nothingness.

"A sheet of steely water," we read, "stabbed with dark shadows stole back and gnawed the edge of a ghastly tongue



of land in the middle distance. There was an unutterable loneliness about it, as of a dead earth, and the livid stretch ashen, with purplish lines, seemed stricken with the touch of a slow decomposition." After this it is not surprising to read that "Norman Thorne looked upon the baleful thing that his hand had made unflinchingly till the grim sullenness of it made him heave a quick sigh. The slight extra strain thus brought to bear on the already over-strained back of his weak chair was the one straw too much. Without prelusive crackle or yielding, it snapped squarely off. . . . He sprang up at once, and towered above the wreck of his chair with quick annoyance flashing from his eyes. A vicious kick sent the shattered thing out of his way, and with his hands thrust in his pockets again he glowered at the remains."

We respectfully submit that here the photographer has missed a great opportunity. A glowering young gentleman with dilating nostrils towering above the wreck of a chair, and kicking it viciously, would surely have made an effective picture, besides bringing instantaneous photography into play. But no. The photographer with annoying perversity elects to put the glowering youth into a good, sturdy, ponderous, studio piece of furniture, with a back that would stand any amount of sighing. As for kicking, the result would be about the same as in the celebrated kicking match when the cow went for the pump under the impression it was a member of its family.

The rift within the lute opens wider as the story proceeds. The young lady of the sorrow-steeped heart is walking in Central Park, where the artist of the chair-breaking sigh is sketching and the wind blows off her hat. The author, regardless of the photographer's feelings, writes of the artist, "He used his long legs to run very swiftly." But he is too late, the hat is blown into the lake, and the young hero plunges after it. This leads to the most remarkable photograph of the series. Here we have the artist, with his legs shorter than ever (the photographer scores splendidly this time), supposed to be dripping with water, and dripping in a way which only the engraver can explain. We certainly trust the photographer is innocent. The drops of water are palpable scratches on the metal block, and very badly done too. Only one coat sleeve is dripping; the other is as dry as a bone, while the gentleman's continuations, which the author says "clung to his legs tightly," are in a normal state of bagginess. Surely this is not what the naturalistic school has led us to expect. We have a right to demand that the sitter should have dipped himself in the photographer's tank before posing. The discovery that the new style is not above resorting to dodges saddens us. We hardly care to note that in the same picture the damsel of eighteen is, from the photographer's point of view, a matronly and rather dumpy person of at least thirty.

It really would appear that in stories illustrated by photographs from life, principles which used to be considered essential are of no consequence. The old-fashioned notion of author and artist entering into the spirit of each other's work is all moonshine if the last picture illustrating the story can be justified. Underneath the photograph are the words, "It was I who bought your portrait," the picture showing the hero with a sickly smile on his quivering lips, holding the matronly lady of eighteen in his arms, the two being posed as if about to dance the polka. Yet the text says, "He knelt before her, his fingers clasping hers, his gaze bent eagerly upon her. She raised her head slowly with the searching love light in her eyes, put forth her hand upon his forehead, and brushing back the thick hair, said softly, with smiling lips, 'You foolish boy! It was I who bought your portrait.'"

After this we give up. The union of photographer and novelist may be a very desirable thing, but at least the two ought to make up their minds to agree upon all important points. Most readers are indulgent, still they may be irritated beyond endurance, and when they are perpetually getting "mixed" between text and pictures, the book by a "vicious kick" may find its fate in the fire.

#### THE PRINCESS OF WALES AND PHOTOGRAPHY.

KING MIDAS turned everything which he touched into gold. That was in Phrygia and in the days when Pan and Apollo engaged in a musical contest. Nowadays the royal touch makes fashionable that which it favours.

We have chronicled in these columns the names of those personages of high degree who have fallen in love with photography. The last instance of such a conquest is shown in the case of H.R.H. the Princess of Wales. But, as becomes the native wit of the Princess, Her Royal Highness has turned her thoughts towards a new scheme for utilising amateur productions of the camera. In the summer, with H.R.H. the Princesses Victoria and Maud, both of whom are expert photographers, she succeeded in taking a series of admirable views in Scotland. Most of the landscapes included portraits of some of the royal circle. These negatives the Princess has placed in the hands of Messrs. John Mortlock and Co., the well-known manufacturers of china, for the purpose of illuminating a tea service for Her Royal Highness.

On the highest authority we are able to give particulars of this tea service, which will doubtless set the fashion for other examples of amateur photographers' work. For the purposes of fitly emphasising this new scheme for recalling at "five o'clock tea," the scenes which the Princess chose for photography, Messrs. Mortlock have designed an entirely fresh shape for the tea-cups in the service, which will be of white china. On the sides of the tea-cups will be transferred, as well as on the saucers, prints from the negatives. There will, in all probability, be sixty-three distinct pieces in the tea service. The colour in which the views will be printed will, it is expected, approximate to the tint favoured by Bartolozzi. The whole service will be original in style, both as to shape and as to its decoration by photography. The execution of this work by Messrs. Mortlock is gratifying on other grounds beyond the tribute again paid by Royalty to the excellence of the taste of that firm. It will lead the way towards another artistic, and at the same time interesting, use for the productions of amateur photography. Although, probably, conversation rarely fails at afternoon tea-time, yet the sight of charming spots where pleasant hours have been spent by their photographers cannot fail to lend additional piquancy to the hour sacred to Saint Bohea.

#### Photo-mechanical Prints with an Ordinary Copying Press.—

Herr A. V. Lavroff, the editor of *Amateur Photographen*, our Russian contemporary, thus describes his method for obtaining a cliché from which it is possible to obtain several hundred impressions in an ordinary copying press:—"On a thick sheet of glass I obtain a cliché by means of bichromated gelatine, which, after developing, I leave to dry at the ordinary temperature for twenty-four hours, after which I flood it with the following 'bain mouilleur':—

Water	...	...	...	...	...	100 cc.m.
Glycerine	...	...	...	...	...	200 cc.m.
Hyposulphite	...	...	...	...	...	2 grammes.

This is allowed to act from one to two hours, according to the desired relief. Then I remove the liquid from the glass by means of a very soft pad and blotting paper, and then I ink up the cliché by means of a gelatine roller. The first pull or two are generally poor and are somewhat spoilt by the dampness of the cliché, but the subsequent impressions are excellent. In order to print in the copying press, I lay the inked clichés on a piece of india-rubber cloth, a mask of paraffin paper, and then the paper on which I wish to have the impression, and over this a thin bag of fine cloth filled with wadding. It is the use of this blanket which makes it possible to press the paper into contact, and to obtain all the fineness and details of the cliché. Of all the formulæ I have tried for the 'bain mouilleur,' I have found the above the best, as well for the relief as for the number of impressions. If after about twenty pulls the details of the high lights begin to show gray, one only need damp the cliché with a pad dipped in the same liquid, in order to make it as good as ever."



## Notes for Novices.

### THE DIAPHRAGM (*continued*).

THE influence of the diaphragm as regards the size of it is important, for, as we have already seen, the exposure varies according to the size of the diaphragm aperture, or rather, according to the square of its diameter. The influence of the size of the diaphragm aperture upon the illumination of the plate is very great. When we use a large aperture diaphragm the illumination is brilliant, and as we insert smaller and smaller diaphragms it gets flatter and flatter; therefore, it is always advisable to use as large a diaphragm as possible. Depth of focus is a theoretical impossibility, but an actual fact, and the smaller the diaphragm the greater the depth of focus, or, in other words, the smaller the diaphragm the more objects on different planes or at different distances from the camera we can get in focus.

For focussing it is always advisable to choose one object, about the middle distance in a landscape, or else a figure, or the most prominent object in the view. Focus this as sharply as possible with full aperture of the lens, then insert the next size diaphragm and again look at the focus screen. If the rest of the view is not quite so sharp as you may desire, then insert the next size diaphragm till you have got everything as sharp as you want it, then cap your lens and expose.

There are one or two little fallacies with regard to the diaphragm which it is advisable to note. The first is that using a small diaphragm increases the covering power of the lens. Well, a diaphragm, however small, does no such thing. We often see the statement made that a certain lens, made for half-plate say, will with a small diaphragm cover a whole-plate. Well, so the lens would cover the whole-plate without the diaphragm. What the insertion of a smaller diaphragm does is merely to increase the area of sharp definition, a totally different thing. This is easily proved by fixing a quarter-plate lens to 12 by 10 camera, and so arranging the camera that the image of the sky is thrown on to the focussing screen; we shall then find that the diameter of the circle of light is about 6 in., the diameter of the area of sharp definition is about 5 in., if the lens has a very flat field, or  $3\frac{1}{2}$  to 4 in. if the field of the lens is curved. Now, on inserting a very small diaphragm, the diameter of the circle of sharp definition is increased to the full limit of the illuminated circle. Another fallacy is that when a stop is inserted the object previously focussed on requires refocussing. Now this is obviously untrue, as the action of the diaphragm does not alter the length of the focus except for the rays of light near the margin.

One method of using the diaphragms which has been very often recommended, is to focus with full aperture and then always insert a given sized diaphragm—for instance,  $f/32$ —it being claimed for this method that by this means a beginner more readily begins to understand the “*pons asinorum*” of exposure, and can easily mentally refer back to the appearance of any view on the ground-glass of which he obtained a good negative, and thus judge as to the relative exposures of different views. Another plan, proposed, we believe, by Captain Abney, is to focus with a certain aperture, say  $f/11$ , and then always to insert the one half that size, viz,  $f/22$ . The objection we have to both these plans is that neither is calculated to be suitable to every subject, and that some view—for instance, a landscape with some trees rather near on a dull windy day—will require an exposure as short as possible, so as to avoid blurring from movement of the boughs and leaves of a tree; and, again, it may be necessary and, indeed, is often advisable, when focussing a landscape with figures to obtain the figure sharply defined and the several planes of the landscape less distinct, and this can only be done by the use of fairly large apertured diaphragms. Therefore, never tie yourselves to one general aperture; use your common sense and judgment, and you will thus obtain far better and more artistic results.

Our next note will be on Choice of a Plate for general out-door work and also for special work.

**New Etching**—A very happy reproduction of the celebrated picture by Metz, entitled “The Cello Player,” has been just published by the Fine Art Society. Mr. Macbeth Raeburn, who has etched with excellent success and skill this interesting picture, is to be heartily congratulated on both his subject and his work.

## Exhibitions

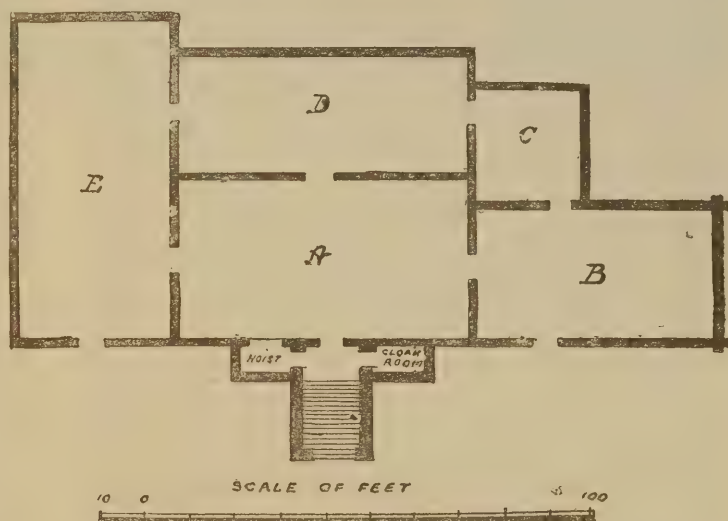
### LIVERPOOL INTERNATIONAL PHOTOGRAPHIES.

#### No. I.

(By Our Special Correspondent.)

#### FROM OVERTURE TO FINALE.

At a fashionable gathering of 3,000 “evening-dressed” ladies and gentlemen, the curtain was at length, on Friday, 6th March, rung up on the long-anticipated, much-discussed Liverpool International Photographic Exhibition of 1891. Musical accompaniments, superb management, and the presence of some of the finest photographic talent in the world—the latter represented by masters of photography in person, and by highest class photographic work—assisted to give the show a send-off at once inspiring and imposing. Galleries in admittedly the finest art exhibition building in the three kingdoms (see plan) are allotted to the over 4,000 pictures comprising this latest photographic collection, and as the critic picks his way among the animated groups of people which line the galleries, the fact is



forced upon him that he must come to review the display on another and quieter day. It is a wonderful collection and selection, this exhibition—as significant of the extraordinary advance of photography universally as it is eloquent of the vitality, vigour, and enthusiasm of those who have borne it to such splendid success.

Upwards of 1,500 frames, including 4,200 or 4,300 different pictures, contributed by the very best workers in photography from all parts of Great Britain and Ireland, America, Australia, India, Italy, Germany, Russia, France, and other countries, make up an exhibition quite unequalled in the past annals of the photographic art.

The Liverpool Photographic Exhibition of 1888, excellent as it was, is quite eclipsed by this of 1891. Three years have wrought marvellous improvement. Comparing the two exhibitions, it is found that the number of exhibits has largely increased, they are much more representative, and they show a marked advance in quality. And this progress is not more remarkable for its rapidity than for its generality and consistency. In all departments and in all processes there have been distinct steps forward. Whatever possibilities there are for photography in the future, the work in the Liverpool 1891 Photographies marks an epoch.

One of the most striking evidences of the worth and importance of the exhibition is manifested in the number of photographic experts, amateur, professional, and journalistic, present at the complimentary dinner given to the adjudicators an hour or two prior to the opening ceremony. Representatives of England, Ireland, Scotland, and Wales were unanimous in their praise of the work sent in, its classification, and, in fact, of all the details connected with the show. “It is a *unique* exhibition,” said one of the post-prandial speakers; and perhaps a better and more expressive term cannot be applied to it. Mr. Paul Lange, the Pre-



sident, and Mr. T. S. Mayne, the Secretary, seemed to be particularly well pleased with his concise designation, as were the remaining gentlemen of the executive.

As will readily be believed, the dinner to the judges, Messrs. J. Gale, H. P. Robinson, A. Pringle, J. Pattison Gibson, G. Watmough Webster, and Captain Abney, was a great success. Nearly forty gentlemen were present; the cuisine was excellent, the "flow of soul" exhilarating, and the speeches admirable.

Among the speakers to the several toasts were Messrs. Paul Lange, H. P. Robinson, J. Gale, J. P. Gibson, G. Watmough Webster, H. Moore, A.R.A., C. W. Hastings, T. S. Mayne, and T. Taylor.

Several prominent Liverpool gentlemen, including Mr. Philip H. Rathbone, the foremost of local authorities in art matters, were also present and assisted at the repast.

#### THE OPENING CONVERSAZIONE.

Towards eight o'clock a move was made to the Walker Art Gallery. Rain was falling for the first time in Liverpool for many days, but the unpropitious change affected the opening attendance little if at all. A long file of carriages discharged their freights at the foot of the Walker Gallery steps for upwards of an hour, the guests being ushered to the exhibition rooms amid the strains of an unusually excellent brass and string band. Liverpool's permanent collection of art treasures in the same building was also thrown open, which in some degree, later on in the evening, thinned the over-crowded photographic galleries. Animation, bustle, and gaiety ruled supreme. The fine display of exhibits, tastefully arranged and picturesquely surmounted by decorations in a delicate shade of blue and old gold, were an effective background to the streams of daintily dressed ladies, and gentlemen in "claw-hammer" coats, who passed and repassed before them. Scattered here and there were chatting groups of many of the most widely-known men in photography—judges, exhibitors, officials, and representatives from leading centres in filial converse. Hurrying from one gallery to another, busily attending to the comfort of the vast assembly, were the officers and the stewards, easily distinguishable by the red and white, or blue and white favours in their button-holes. Look where one would, from the refreshment saloons to the street door, there was a chance for an interesting snap-shot at every step.

At about nine o'clock the formal speech-making was commenced, Mr. Lange being supported on the platform by Mr. Philip H. Rathbone and Mr. E. R. Russell, Editor of the *Liverpool Daily Post*.

The President extended a cordial welcome to the visitors, and Mr. Rathbone then declared the Exhibition open. He said that they had around them the results of a comparatively unknown artist—the sun. For many years the sun had done great work in agriculture and other departments, but it was only recently that he had turned his attention to art. Yet none could gainsay that at the present time he was one of the greatest artists they had.

Mr. E. R. Russell, in the name of the people of Liverpool, welcomed all photographers from a distance, and expressed an earnest hope for the prosperity of the Exhibition. Mr. Traill Taylor and Mr. Charles W. Hastings followed. The latter gentleman's remarks, he being the only representative of the photographic Press present at the Liverpool Exhibition of 1888, had especial interest. Mr. Hastings said—"I am extremely pleased to be called upon to say a few words this evening. I had the very distinguished honour of being the only representative of the photographic Press here in 1888. This Exhibition is the outcome of that promoted by the Liverpool Amateur Photographic Association. I believe I am right in saying that amongst all the 200 photographic associations, Liverpool has done the best work in the past, and there is every prospect of their doing the best work in the future, for they have most excellent workers to support them. You have heard Mr. Taylor speak of the names of Sayce and Bolton. Mr. Sayce has done work in photography for many years, and I congratulate him heartily on the progress made, and on the wonderful developments which he has produced. We have before us here a compliment to photography by one of the most accomplished workers—Mr. Ralph Robinson. It is a compliment to photography to know that artists have thought fit and proper to sit to a photographer in their own homes. It is not probable that this collection will ever be surpassed. There is another matter I should like to mention. We have a gentleman present

to-night who is known all over the world—Mr. H. Moore, A.R.A. We, as amateur photographers, have the honour of ranking him by our side. He is a photographer of forty years' standing, and is not above acknowledging that photography has done good service to art. I will call upon him to say a few words." Mr. Moore and Mr. G. Watmough Webster spoke in felicitous terms, and then Mr. T. S. Mayne and Mr. Paul Lange, both of whom were received with rapturous applause, concluded the formal proceedings in a few well chosen words.

#### AWARDS.

Nearly fifty awards were made. These included three gold medals, eighteen silver, and twenty-three bronze. The list is:—

Class.	Medal.	
1. Portraits .. ..	Silver ..	Withdrawn.
2. " .. ..	Bronze ..	Harold Baker.
3. " .. ..	" ..	Window and Grove.
4. " .. ..	" ..	W. J. Byrne.
5. Landscape .. ..	" ..	E. Lloyd Edwards.
5. " .. ..	" ..	F. D'Arces.
6. " .. ..	Silver ..	Wm. Tomkinson.
7. No award, medal withheld.		
8. Landscapes .. ..	Bronze ..	Thos. Zacharias.
9. No award, medal withheld.		
10. Marine and Cloud Studies	Silver ..	S. Bourne.
10. " .. ..	Bronze ..	Thos. Glazebrook.
11. Animals .. ..	Silver ..	Chas. Reid.
12. Groups (Outdoor) ..	" ..	F. M. Sutcliffe.
12. " .. ..	Bronze ..	F. Bremner.
13. Architectural .. ..	" ..	C. Court Cole.
14. Architectural (8 by 5) ..	" ..	G. E. Thompson.
15. Scientific .. ..	Silver ..	R. Paulussen.
15. " .. ..	Bronze ..	Cecil V. Shadbolt.
15. Flashlight Pictures ..	Gold ..	Countess Loredana de Porto Bonin.
16. Genre .. ..	Silver ..	Shapoor N. Bhedwar.
17. Enlargement .. ..	Bronze ..	Chas. W. Huson.
18. Stereoscopic .. ..	Silver ..	H. J. Houghton.
19. Lantern Slides .. ..	" ..	G. E. Thompson.
19. " .. ..	Bronze ..	John Carpenter.
19. " .. ..	" ..	F. Anyon.
20. " .. ..	" ..	W. L. Howie.
21. " .. ..	Silver ..	Priestley and Sons.
21. " .. ..	Bronze ..	J. W. Wade.
21. " .. ..	" ..	F. Anyon.
22. Hand-Camera Work ..	Silver ..	John White.
23. " .. ..	Bronze ..	A. G. Bristow.
23. " .. ..	" ..	J. M. Nicholson.
24. " .. ..	" ..	W. D. Welford.
25. Instantaneous .. ..	Silver ..	Karl Greger.
25A. General Section .. ..	" ..	H. McMichael.
25A. " .. ..	" ..	W. J. Byrne.
25A. " .. ..	" ..	A. Vandyke.
26. Ladies' Work .. ..	" ..	Miss Lil. W. Tomkinson.
26. " .. ..	Bronze ..	Mrs. Janie N. Hignett.
26. " .. ..	" ..	Mrs. S. F. Clarke.
27. Beginners .. ..	" ..	Vincent Fothergill.
— Champion .. ..	Gold ..	Shapoor N. Bhedwar.
— " .. ..	" ..	J. B. B. Wellington.
— General Collection .. ..	Silver ..	Chas. Scolik.
— " .. ..	" ..	R. S. Redfield.
— " .. ..	Gold ..	Ralph W. Robinson,

for his unique collection of eminent artists, together with his other work.

#### PROMINENT PICTURES OF THE SHOW.

Pictures which may be placed in this category are very numerous, the standard reached in most instances being surprisingly high. We intend to notice each in turn, but this week have only space to mention comparatively few. Lantern slides and apparatus are also held over for review until next week. The gold medallists, Countess Loredana de Porto Bonin, Shapoor N. Bhedwar, and Mr. Ralph W. Robinson, certainly deserve the highest recognition. The Italian countess's twelve flash-light pictures, 623 to 634, which won for her the golden distinction, are marvellously correct. She also has a genre study, 677, which is very high class, and five landscape studies, 319 to 322, and 401. This lady has a wonderful eye for artistic posing and effect, and



her studies are finished with the utmost conscientiousness and care. Shapoor N. Bhedwar has won the coveted honour with a lovely picture, 1,009, "The Feast of Roses," an exhibit in the Champion Class. Mr. Bhedwar is a worker who will take a stand with the best of the front-rank men. He also contributes a genre study, 645. Mr. Ralph Robinson exhibits a large number of pictures in various classes, nearly all of which have attracted special attention. His unique and valuable series of "Artists at Home" (well known in London) are, however, apparently the most popular. Mr. Charles Scolik, of Vienna, shows twelve platinotype costume studies, 903, really clever, amusing, and interesting; and Mr. Alfons von Mumm, Washington, U.S.A., also has some very capital pictures. Vandyke, 934 and 938, and Barraud's are professional firms with very excellent work in portraiture; Mr. H. McMichael, 61 to 64, shines in the same line, other good work being that of Mr. T. H. Flather, 53 to 56, Mr. George Latimer, 5 to 8, and Mr. Harold Baker, 65 to 68, the latter a bronze medal winner. Four pictures, 95 to 98, by Mr. W. J. Bryne, are clever and pleasing, as are 106 to 109 by the same worker. In Class V., 118 to 121, Dr. Reynolds, of London, shows four exceedingly creditable pictures taken in Iceland; Mr. E. Lloyd Edwards four studies, 142 to 145 (No. 143 the best); Mr. A. Hendry four studies, 174 to 177; Mr. William Bedford four studies, 210 to 213; Mr. T. M. Brownrigg four studies, 218 to 221; and Mr. S. G. Buchanan Wollaston, the courteous Secretary of the Crystal Palace Exhibition, four, 230 to 233, 233 being the pick of the set, which are hoar-frost studies. Other noticeable pictures in landscapes are 247, Mrs. Janie N. Hignett; 249, Sidney Snelgrove; 257, Mr. Henry Lupton; 262, Mr. W. P. Shaw; 268, Mr. William Tomkinson; 275, M. de Déchy; 289—290, J. Milman Brown; 354, Lamond Howie; 377, J. L. Mackrell. In Marine and Cloud Studies, Class X, Mr. Thomas Glazebrook exhibits four pictures, 407 to 410; Mr. Henry Rupert Marsden four, 419 to 422; Mr. Harry Symonds four, 424; Mr. S. Bourne four, 432 to 435, of which 435 is the cleverest; Mr. A. F. Stanistreet, 438; Mr. J. L. Mackrell, 468; and Mr. William Parry, 469 to 472. In Animal Studies Mr. Chas. Reid takes the silver medal with 485; Mr. F. M. Sutcliffe being equally successful with 503, of 503 to 506. Among the Outdoor Groups Mr. C. Court Cole and Mr. G. E. Thompson each take a medal in the Architectural Class, the former with 565, and the latter with 589. Both are very fine productions. Mr. Cecil V. Shadbolt's 583 is also very fine. In the General Section, Messrs. H. McMichael is particularly to the front with a series comprising two scenes from *Twelfth Night*, 859 to 860, and six studies, "Enoch Arden," 861 to 866. Mr. Fred Hollyer, with work of equal merit, comes in from 890 to 899. Miss Lil. W. Tomkinson takes the President's prize in the Ladies' Class with four pretty pictures, 955; Mrs. Janie N. Hignett, 946; and Miss Edith B. Wilson, 947, are also to be specially commended for their contributions. The Champion Class pictures, and many of those in the "Not for Competition" department, are of rare excellence. Messrs. Richard Keene, Lyd Sawyer, Marshall Wane, A. Schmitz, J. L. Mackrell, R. H. Lord, W. W. Winter, A. R. Dresser, Frank M. Sutcliffe, J. B. B. Wellington, J. P. Gibson, Louis Meldon, J. Moffat, H. P. Robinson, Paul Lange, J. Gale, etc., have each magnificent pictures hung. But of these, with others, together with notes of the lantern slides, etc., more anon.

## Notes from the Edinburgh Centre.

(By our District Editor.)

At the monthly meeting of the Edinburgh Photographic Society in Dowell's Rooms, George Street, on 4th inst., Mr. H. J. Blanc, the President, occupied the chair, and business went on much more speedily than at the previous monthly meeting, when much time was spent in preliminary wrangling. After seven members had been admitted—one lady and six gentlemen—the Chairman made an intimation that in future the technical part of the business would be taken first, and any other business afterwards. He then dwelt on the proposals with reference to the holding of out-door meetings during the summer, and the granting of medals for the best work of the season. He was sure, he said, that when they went out on Saturday afternoons, and met others with cameras, they frequently heard it regretted that in the Society opportunities were not afforded whereby they might go

as a community, and instruct themselves by interchange of experiences. Outdoor meetings used to exist as a part of the programme of the Society, and it had been thought that with so large a number flocking round the Society, it would be a very interesting and instructive part of their business to hold those meetings. They would be held on Saturday afternoons, and the Council hoped they would be able to bring together a number of good workers who should in the winter months following be able to lay before them the results of the gatherings. It was intended to offer medals, not altogether in connection with the outdoor meetings, but one medal would be given for the best work produced at one of the three summer meetings.

Dr. Wm. Stewart then read a paper on "Gelatio-Chloride Papers and their Manipulation." He made, he said, no pretensions to account for the chemical reactions, but would simply relate his own experience, and the results obtained. He was induced to take up the subject on account of his having been for some time resident in Switzerland. He claimed many advantages for these papers; they print more easily and efficiently, are simpler in their manipulations, and require less washing than ordinary prints. His experiments were chiefly directed towards the finishing of the print, and he showed that by drying the print on ground-glass it was possible to produce a print with a matt surface. Dr. Stewart handed round specimens of matt-surface prints, as well as of prints finished with the highest glaze and as ordinary silver prints. In the discussion which followed, Mr. W. T. Bashford, Portobello, referred to the delicate shades which could be produced by the paper, and, speaking of the difficulty of mounting, because of the water in the mountant destroying the gelatine, he told of the method by which a French photographer he once met overcame this, which was by mounting in a cut-out mount, and pasting the edges of the print to the front portion of the mount, leaving the body of the print altogether unattached to the back. Mr. J. M. Turnbull, Rose Street, pointed out that the paper went by the name of Ober-netter because a German manufacturer was the first to place it on the market, but that the discovery was in reality an English one. Dr. Stewart was thanked for his paper.

The photographic supper, to which I referred last week, was held in Daish's Rooms, in South St. Andrew-street, on the evening of Friday last, and was a great success, though not largely attended. In the absence of Mr. Blanc, who was in the country, Dr. Drinkwater occupied the chair, and was a host in himself. The toast of "The Edinburgh Photographic Society" was proposed by him in a few words, and was acknowledged by Mr. T. Barclay, the secretary of the society. Mr. J. R. Roddick, the assistant secretary of the Edinburgh Society, proposed "The Edinburgh Photographic Club," which, he said, contained the cream of Edinburgh photographers. Mr. John S. Smith acknowledged. Mr. James Crichton proposed "Kindred Societies," and, in replying, Mr. G. G. Mitchell said he often wished there was more interchange of ideas and socialities among photographic societies, and he suggested a conference of representatives, at which matters relating to photography might be talked over, and they would thus learn from one another. Mr. Charles Fraser, the croupier, proposed "The President, Vice-Presidents, and office-bearers of the Edinburgh Photographic Society," and recalled the distinguished men who had held office, and all of whom had worked ably for the benefit of photography. Mr. J. M. Turnbull acknowledged the toast. The Edinburgh Photographic Society, he said, certainly did not now stand forth as it used to do. There had been a great increase in the number of photographic societies—and the more the better—but previous to the great impulse which the gelatine plate gave to the art they all so much loved, the Edinburgh Society was the principal photographic society in the world, in the position it occupied, as well as in the able papers which were read before it and the number of members it had. Mr. Mitchell proposed "The Literature of Photography" in an interesting speech, coupling the toast with the name of your representative in this district, who did his best to acknowledge the honour paid to the AMATEUR PHOTOGRAPHER, as well as to himself, but did it, I fear, only very indifferently. A suggestion by Mr. Turnbull that the Photographic Convention should be invited to Edinburgh in 1892 was received with much favour. It was resolved to despatch a telegram to the Secretary of the Liverpool Photographic Society, conveying the greetings of the gathering and their best wishes for the success of the Liverpool Exhibition. The hour being late, the telegram was sent by Mr. Ayton on Saturday morning.



## Apparatus.

### THE "CLIMAX" HAND-CAMERA.

MESSRS. J. WATSON, of 34, Grainger Street, and G. Johnston, of 37, Warrington Road, Newcastle-on-Tyne, have invented and patented a new hand-camera, which they claim to be the simplest and most effective automatic changing hand-camera in use at present. The camera, which is constructed to carry eighteen or twenty-four plates, is very compact, the outside measurements being only 10 in. by  $4\frac{1}{2}$  in. by 4 in., and the changing is done by the simple pulling out and return of a brass rod by means of a small milled head in the front. The plates are in metal sheaths, and the apparatus is so arranged that no plate can be exposed twice in consequence of over-running the number stored. The camera is fitted with a fixed-focus doublet and a very quick shutter, working between the lenses, which is also the invention of Mr. Johnston. The lens works at  $f/10$ , and will easily cover a 5 by 4 plate. It was proposed to place a quarter-plate finder on the camera, with a lens of the same focus as the doublet; the exposure of the plate would not interfere with the view in the finder. The whole, loaded with eighteen plates, weighed only  $4\frac{1}{2}$  lbs. Although the model shown to us was, of course, somewhat incomplete, there appeared to be in it all the elements of future success.

### ROBERTS'S HAND-CAMERA.

MR. ROBERTS, of Leytonstone, has favoured us with a call to show us his improved hand-camera. It is made of black wood, and measures  $11\frac{1}{2}$  by  $5\frac{5}{8}$  by  $7\frac{3}{4}$  in., and weighs, when filled with plates, about 6 $\frac{1}{2}$  lb. It is arranged to take eighteen quarter-plates, which are stored in a grooved chamber at the top of the camera. When required to expose a plate, a little pin at the back is pulled out, and a plate is heard to drop down into focus. After exposure the camera is turned upside down, and the same little pin is again pulled out, and the plate is heard to drop back into its original groove; the pin is pushed home, the camera turned over, and a milled head at the side of the camera is released by a catch at the top, and is turned till the index shows another plate is ready to drop down into the exposure chamber. By having thus one magazine chamber considerable room is saved, and a convenient little door at the back enables one to focus on a sheet of ground-glass in the lower chamber with a certainty of not getting the plates fogged, and of having the plate exactly in register also. The front bearing the lens is attached to a little bellows, and the camera may thus be used in the ordinary way on a tripod, a screw and socket being provided for this purpose; the lens is also attached to a shifting front. The shutter is of the blind type, working in front of the lens. A sunk finder and level are also provided; underneath is a scale of distances for focussing for hand-work, the lens being moved by a small rack and pinion. The whole instrument is the outcome of a practical worker's effort to provide a boxed-in camera which could be used as a hand or ordinary camera with the advantages of a magazine attached, and, at the absurdly cheap price of £3 10s., this should find many friends amongst our readers. This price does not, of course, include a lens, but Mr. Roberts also supplies a rectilinear lens, of  $5\frac{1}{2}$  in. focus, working at  $f/6$  approx., at 25s extra, and we can certainly speak highly of its covering powers, as evinced by some specimens of work done by it last week at Torquay. Shorter or longer focus lenses can also be used with it.



**"Perfected Pensions."**—The Directors of the Church of England Assurance Institution felt that some method of securing an annual income in old age, instead of merely an endowment policy, was needed, and have formulated a scheme by which a man aged thirty, may, by an annual payment of £15 only, until the age of sixty-five, secure for himself an income thereafter of no less than £100 per annum; while should he unfortunately die before reaching that age, the whole of the premiums paid by him would be returned to his representatives. To secure these policies no medical examination is required, residence is allowed in all parts of the world, no extra premiums can become payable under any circumstances, the whole of the premiums paid are returned in the event of death before the attainment of pension age, the policies are unconditional from the commencement, and they are strictly non-forfeitable.

## Quarterly Examinations in Photography.

**Question 19.**—Describe the production of a transparency by the carbon process.

**ANSWER.**—A print is first taken from the negative on a piece of sensitised carbon tissue, a special quality of which, prepared for transparencies, can be obtained ready for use, consisting of paper coated with a solution of gelatine containing a coloured pigment, and sensitised by floating on a bath of bichromate of potash. The negative must be given a "safe edge" of black about a quarter of an inch wide to protect the edges of the tissue from the action of light. The operation of printing is the same as for an ordinary silver print, but its progress cannot be watched; an "actinometer" must be used to gauge the exposure. The glass which is to form the permanent support of the picture should be prepared by coating with a weak solution of gelatine containing a small quantity of alum and allowing to dry. The exposed tissue and the glass are then soaked in cold water until the former lies perfectly flat, when they are placed face to face, removed from the water, and squeezed together. The picture is then developed by placing the print attached to the glass into warm water (about 100 degs. F.), when in a short time the paper packing can be removed, and by gentle washing those portions of the film not acted upon by light are removed, leaving the picture formed by the gelatine on the glass. After rinsing in cold water, soaking for a short time in an alum solution, and again washing, it is allowed to dry, and is then ready for mounting.

WORFIELD.

**Question 20.**—What is the action of light upon a film of gelatine impregnated with bichromate of potash? And what is the action of the exposed film towards water and fatty ink?

**ANSWER.**—After exposure to light it is always found that a mixture of gelatine and bichromate of potash is rendered insoluble in water; but as to the exact chemical reaction, authorities differ to a very considerable extent. One eminent authority (Abney) asserts that the bichromate is reduced and chromic oxide formed. Another (Eder) states that a chromate of chromium is produced, and that the gelatine associated with this compound in the part insoluble in water after the exposure is not changed in its chemical composition, whilst a third (Burton) thinks that chromic acid is liberated.

As previously stated, the mixture is insoluble in water after exposure to light, and if a film of it be exposed under a negative, we shall have the various shades of the negative represented by different degrees of solubility; but if after exposure we simply soak it in cold water, we shall have the lights and shades represented by different degrees of relief, as those parts acted upon by light absorb water less freely, and so swell up to a less extent than the unaffected parts. If we now apply a fatty ink to the film, we shall find that it will only adhere to those parts which have been acted upon by light, and which have not absorbed water, and it will adhere to the parts exposed to light in nearly exact proportion to the intensity of the light that has acted upon it.

SUNESIS.

**Question 21.**—Is there any difference between photographing a landscape and a reproduction of the same in oil colours? Explain your answer.

**ANSWER.**—The difference between photographing a landscape and an oil painting is very great.

(1) The exposure in the latter case must be very much greater than in the former. In photographing the landscape, the light from a vast area is concentrated by the lens on the small area of the sensitive plate, and must necessarily be very much more intense than that reflected from the comparatively very small area of the painting.

(2) The gradation of tone, contrast, etc., in the copy of the painting will not be influenced by the time of day, state of the weather, etc., as when photographing the landscape.

(3) Colour. In a painting the contrasts of colour must often be exaggerated to give the impression of greater varieties of light and fulness of colour than can be actually produced by artificial pigments. The "actinic" value of the colours being so different to their "visual" value, the impression rendering of the colours in the photograph will be much more noticeable than it would be in a photograph of the landscape. In a painting also, yellow tints prevail when representing landscapes in full sunshine. As we know that yellow has little effect on the sensitive film, those parts which appear brightest in the painting will appear very dark in the photograph, so that to obtain a good copy of an oil painting it is absolutely necessary to use an orthochromatic plate and also a colour screen.

WORFIELD.

Answers have been received from and marks awarded to A. C. S., Developoid, Worfield, Lindum, R. C. M., Electra, Biarritz, Sunesis, E. B. C., Spain.



## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Bath.**—The second annual general meeting was held on the 25th ult.; Mr. W. Pumphrey presided. The Rev. C. Reay Pughe was elected a member. The report, which was then read, stated, *inter alia*, that the present number of members is 81. The Treasurer's statement shows that the Society is in a sound financial position, and the Committee look forward to the coming season as likely to be in every respect as successful as those that have passed. The election of officers for the ensuing year then took place, when those who had previously served were thanked for their services and re-elected by unanimous vote as follows: President, Mr. W. Pumphrey; Vice-President, Mr. Austin J. King; Committee, Mr. Braham, Mr. Greene, Mr. Perren, Mr. Pitt, and Mr. Powell; Hon. Secretary and Treasurer, Mr. Middleton Ashman, 12, Old Bond Street. The official business disposed of, technical subjects were next dealt with. Captain Harrison, Cheltenham, showed an album of prints, whole-plate size, illustrating winter sketches. Mr. Aug. F. Perren exhibited and described the details of the Watkins exposure meter. The Secretary showed Samuel's patent hand-camera, the Policeman hand-camera, the Perpetual time and instantaneous shutter, and Ballard's actinometer. After the business of the meeting had been concluded, Mr. Wells discoursed on the subject of "Lantern Slide Making."

**Bolton.**—The Society celebrated the opening of their new rooms in Rushton Street, off Corporation Street, on the 5th inst., by the holding of a dinner and subsequent "talk" in the new premises. The Society has been in existence since 1879, and has now a membership of over seventy. They used to meet at the Baths, in Bridgeman Street, but the arrangement was found to be very inconvenient, and after due consideration it was determined the society should have rooms of its own, where the members could work when unable to go outside owing to climatic influences, and also where specimens of different classes of work executed by the members might be exhibited. A couple of rooms were secured in Rushton Street and which overlook the Co-operative Society's premises in Bridge Street and one advantage about this selection is that besides having a good light there is opportunity afforded for extension when funds will allow. At present there are two rooms, one of which is to be a "dark room" for the use of members, and the other as a general conversation and lecture room. In the latter room there is a screen made in the wall of plaster of Paris, and upon which subjects under discussion will be illustrated by the aid of the oxyhydrogen light. The subscription for an ordinary member to the Society is 10s. per annum, and 5s. for open membership. The President, Mr. Bridson, occupied the chair at the dinner. The rooms contained some excellent photographs, and there was also some apparatus on view.

**Bournemouth.**—At a meeting on the 25th ult., an interesting paper was read by Mr. Paul H. Price, on "Photographic Printing," dealing exclusively with silver printing-out processes. After mentioning various kinds of silver paper suitable for printing, he called special attention to the gelatino-chloride paper of Obernetter, with which he held the best results could be obtained, provided some care were taken in the operations. Mr. Price dealt with different methods of preparing negatives for printing, such as varnishing, retouching, etc.; also vignetting and the making of vignettes. After describing printing frames, he considered the subject of light for printing, explaining a way of obtaining diffused light for doing this in the sun, then went on to the best methods of toning, the apparatus required, and the baths used by different workers; also the washing of prints and how to dry them, so as to impart a dull or brilliant surface, as well as mounting the finished photograph. All the chief prints were well illustrated by specimens and diagrams, the paper being followed by a discussion. Dr. Hyla Greves, President of the section, occupied the chair.

**Brechin.**—The usual monthly meeting was held on the 3rd inst., Mr. G. Mackie, A.Ph.S., in the chair. The Curator of the Association, Mr. J. C. Middleton, gave a short but very instructive address on "Lantern Slide and Transparency Colouring," and strongly recommended the members to finish their slides with colour, as he considered they would be greatly improved thereby. He thereafter exhibited some of his own work, giving very full descriptions of how it was done. Mr. Ross said he was not greatly impressed with the ordinary commercial coloured slides, and thought that good plain slides were better than most of the coloured slides we see. A short discussion took place, in which Mr. Middleton was supported by Messrs. Mackie and Brown, and Mr. Ross by Mr. W. M. Vallentine. Bailie Lawrence then exhibited some slides of American and South

African views. It was intimated that the next monthly meeting would be held on April 7th, when the AMATEUR PHOTOGRAPHER Prize Slides would be exhibited, members being invited to bring their friends.

**Cardiff.**—At the ordinary meeting on the 6th inst., the President (Mr. C. F. Gooch) in the chair, the following gentlemen were elected ordinary members of the society: G. H. Hodges and B. McCallum. The President invited the attendance of the members to an excursion by the Naturalist Society to Newnham next Friday, and trusted they would return with some good negatives of that wonderful phenomenon, the "Severn Bore." The American lantern slides were then passed through the lantern, and were generally admitted to be the finest collection of slides exhibited during the winter session. On the 27th ult. the members of the Cardiff Photographic Society were treated to a lantern display, consisting of hedgerow, cottage studies, and statuary by the Woodburytype process and a selection of views by Wilson, all of which were above the average. The lecturer was Mr. E. Lewis, who also manipulated the lantern.

**Cambridge.**—An interesting meeting took place on the 4th inst. The experiment of practical enlarging was very successful, each member bringing his negative and enlarging therefrom. Mr. G. H. Potts kindly loaned his lime-light lantern for the evening, and managed it with great skill. Several members availed themselves of this opportunity, and had some excellent results.

**Croydon.**—During the fiercest blizzard which has been recorded for the past ten years, the above youthful but enterprising Society celebrated its first birthday anniversary by holding a public dinner at the Greyhound Hotel, Croydon. We understand that between sixty and seventy tickets were taken by members, but a considerable proportion of the guests were prevented from assisting at what proved to be an exceedingly pleasant and enthusiastic function. The chair was occupied by the President, Mr. Th. Maclean, F.G.S., supported by the Vice-President, Dr. H. J. Strong, J.P., the Rev. J. H. C. McGill, Mr. W. E. Woodbury, and various local photographers. In an able and powerful speech Mr. McGill proposed "Prosperity to the Croydon Camera Club," and specially dwelt upon the educational value of the practice of photography in elevating the artistic faculties and in causing us to hold converse with nature, thereby leading our thoughts above the workaday materialism which so greatly environs our lives. The President in replying, shortly reviewed the progress of the club from its inception, and stated although it was no doubt well to be able to look back upon a well spent-life, he preferred, and asked the members to join him in doing so, to look forward and overcome any remaining obstacles which might stand in the way of success. He urged the members to work hard that the forthcoming exhibition might be a distinct and creditable display of their abilities, and stated he hoped that the collection to be shown on the 31st would be the precursor of a much larger one which should be open to all. Other topics touched on were the future home, and the possibility of obtaining the co-operation of an important minority. The President also stated that the number of members elected to date was, in round figures, eighty. Mr. Isaac having proposed the healths of President and Vice-President, Dr. Strong in his reply treated members to a long but lively anecdotal description of his photographic experiences, from which it appears that he is probably the father of the flock, inasmuch as his experience dates from the fifties, when he manipulated the daguerrotype process. He also offered the club a collection of the works of the late Mr. Donkin for exhibition. As evidence of the enthusiasm with which members are inspired, one of them who had arranged to take a flash-light of the company, having left part of the apparatus behind, travelled back home in the middle of the meeting a distance of over five miles through the icy wind and driven snow, and got back about 11.30, in time to burn an amazing quantity of magnesium powder, in the endeavour to get a negative of the company. Before breaking up, the assembly in violation of all precedent, again drank the President's health with musical honours. "Auld Lang Syne," sung with great fervour considering the lateness of the hour, brought this notable gathering to a satisfactory termination. The walk home at one in the morning was something to remember.

**Croydon Micros.**—At the meeting on the 6th inst., Mr. W. Low Serjeant in the chair, Mr. H. Fry demonstrated, and gave a lengthy explanation on "The Uses of Bromide Paper," illustrated by a fine series of examples, both contact and enlargements; some good examples of warm tones obtained by toning with uranium were also exhibited, showing that bromide prints are not confined to the usual cold grey tones. Several members took part in the discussion. On the 16th inst. a meeting of the photographic section will take place to discuss and arrange the summer excursions and rambles.

**Dewsbury.**—The annual conversazione of the Dewsbury Amateur Photographic Society took place on the 5th inst. The President (Mr. A. S. Marriott) delivered a brief address, and then followed exhibits of apparatus, lantern views, and stereoscopes. Some interesting photographs were taken in the room by the aid of a flash-light, and the pictures subsequently thrown on the screen.



**Ealing.**—A meeting was held on the 5th inst. The chair was taken by the President. Mr. George Willis was unanimously elected a member of the society. A paper on "Intensifying and Reducing Gelatine Negatives" was read by Mr. Rowland Whiting. The next meeting will be a technical evening, on the 19th inst.

**East Southsea.**—The fortnightly meeting took place on the 3rd inst., when Mr. J. Clemmins, President, gave a practical demonstration on "Lantern Slide Making," which was much appreciated. Mr. J. J. Thornton, who has promised to give a paper at an early date, exhibited copies of his recent prize winning slides.

**Hastings.**—The next meeting will be held at the Brassey Institute on the 16th inst., at 8 p.m., when Mr. H. F. Bultz will give a paper on "Realistic Photography."

**Herefordshire.**—A meeting was held on the 6th inst., when the AMATEUR PHOTOGRAPHER 1890 Prize Lantern Slides were exhibited to an appreciative and large audience, the room being filled to excess. Altogether a series of 190 slides were thrown upon a screen. The figure studies were particularly interesting, and caused much amusement. After the Prize Slides were finished, Mr. T. J. Salwey, of Ludlow, showed several very good slides, mostly taken in the neighbourhood of Ludlow and district of the Teme, and other local subjects, which brought a very pleasant evening to a close.

**Holborn.**—The above club held its second annual exhibition on the 7th inst., when a very fine display of pictures were brought together. The President (Mr. T. C. Hepworth) and Mr. F. A. Bridge acted as judges, and the prizes fell to the following members: Class I., for the best exhibit of pictures that shall be the most numerous and meritorious: 1st, Mr. Fred. Brocas; 2nd, Mr. S. T. Chang; 3rd, Mr. H. Beckford. Class II., for the best six quarter-plate pictures: 1st, Mr. W. H. Osborne; 2nd, Mr. T. C. Phillips. Class III., enlargements: 1st, Mr. J. E. Smith; 2nd, Mrs. J. E. Smith. Class IV., for the best six pictures taken by a lady member: Mrs. J. E. Smith. Mr. F. Brocas' set of twenty-two whole-plate pictures made a most excellent show. Mr. S. T. Chang's set of eight whole-plate pictures were in his usual careful style. Mr. H. Beckford's set of six half-plate pictures contained some of his very unique and excellent photographs of the interiors of cathedrals, which this gentleman makes a special study. In the quarter-plate competition, Mr. W. H. Osborne comes well forward, especially as he is quite a beginner. For the lantern slide competition, the first prize fell to Mr. S. T. Chang for a fine show of architecture, Mr. Beckford coming second, Mr. Bayston taking third place. In spite of the bad weather, there was a very good attendance of members and friends, about seventy, but probably this was because of the cinderella which the club always adds to its exhibition. A great feature was the dance programme, which was printed on bromide paper, and contained the portraits of the officers of the club. There were about 200 pictures very tastefully arranged by the energetic Treasurer, Mr. Albert Bell, and Mr. S. T. Chang, as is his wont, brought his flash lamps and cameras, and made half-a-dozen exposures. The prize pictures will be on show at the Club-room on the 20th inst., when the prizes will be distributed to the successful competitors.

**Holmfirth.**—The ordinary meeting was held on the 27th ult., the President, Mr. Arthur Preston, in the chair. A most interesting evening was spent with the stereoscope, several members showing their own work. The first outing was arranged for 14th inst. The Secretary, Mr. David Bilson, will be glad to hear from any one wishing to join the society.

**Ireland.**—An informal smoking meeting was held on the 6th inst. Mr. Alex. Conan related his experience of twenty years as an amateur photographer, and was listened to with a great deal of interest by those present. He exhibited a number of prints taken from the wet-plate negatives of his early days as a photographer, which left very little to be desired, and which were in excellent preservation.

**Leeds.**—On the 5th inst. the AMATEUR PHOTOGRAPHER Prize Lantern Slides were exhibited before the members of this Society, the President (Mr. Godfrey Bingley) being in the chair. The following slides in the various classes are worthy of special mention:—Landscape, "The Pass of Killiecrankie," by Mr. W. Gladstone; Californian scenery, Mr. P. T. Foster; Swiss views, by Mr. C. G. Davis; Welsh and Matlock views, by Mr. Godfrey Bingley (President of the Leeds Photographic Society, and winner of the gold medal in this class). Figure studies, "How he Told his Love," and "Nothing half so sweet in life as love's young dream," Mr. W. F. Clarke; "Waiting for a Job" and "The Stone Cutter," Major Lysaght; Russian studies by M. Gratschieff; "Love and Harmony," "The Love Letter," and "Love's Young Dream," by Mr. J. E. Austin, winner of the gold medal in this class. Animal studies and instantaneous pictures, "Entering Port," by Mr. A. D. Guthrie; "Return from the Fair" and "Robin and Nest," Mr. E. J. Bedford; "Cart in Snowstorm" and "Swans," by Mr. W. H. Shirley; "Toilers," "A Porpoise," "Gale at Morecambe," and "Divers at Singapore," by Dr. B. Furneaux, winner of the gold medal. Agricultural studies, Interior of the Municipal Buildings, Glasgow, Mr.

J. Watson; Bayeux Castle, Mont St. Michel, and Church of S. Pierre, by Mr. J. A. Sinclair; views in Gloucester Cathedral and York Minster, by Mr. E. Beck; entrance at Eaton Hall, verandah and library at the same place, by Mr. F. W. Wade, winner of the gold medal in this class. Altogether a very enjoyable evening was spent, many of the slides exhibited showing considerable artistic feeling, combined with technical excellence on the part of the exhibitor.

**Lewes.**—At the meeting on the 3rd inst., the President in the chair, demonstrations were given as follows: The President, Mr. J. G. Braden, "Matt-surface Prints Toned with Platinum;" the Vice-President, Mr. J. Tunks, "Silver Prints Toned with Gold;" Mr. G. J. Wightman, "Hot-bath Platinotype." Great interest was taken in the demonstrations, and specimen prints by each process were shown. The Hon. Secretary handed round copies of Mawson and Swan's diary, Crystal Palace Exhibition prospectus, circulars giving particulars of the "Radial" hand-camera, and a sample "cartridge" of eikonogen, sent by Messrs. Marion and Co., also sample packets of the "Barnet" plate. A special meeting was held on the 7th inst., when members and their friends were shown some lantern slides. Next meeting, April 7th, lantern slide competition, the last lantern night of season.

**Lewisham.**—At the meeting held on the 6th inst., Mr. Alfred H. Miles in the chair, the prints and slides of the recent competition were exhibited. The judge of the prints was Mr. H. Bedford Lemere. The first prize in Class A was awarded to Dr. Dashwood for a small platinotype print, entitled, "Evening;" the second prize to Mr. H. J. Turney for a bromide print of Bonchurch. In Class B the judge withheld the first prize, and awarded the second to Mr. H. Harvey-George, the Secretary of the Great Yarmouth Society, for a fine picture, "Why Doesn't he Come?" In Class C., Mr. H. Howell gained the first prize for a "Sailing Barge" study, and Mr. E. B. Eastwood the second. The judge also highly commended prints sent in by Messrs. Castle, Townsend, Davis, Rogers, and E. Eastwood, and expressed his approval of the work sent in on the whole. M. A. R. Dresser judged the slides, awarding the prizes as follows: Class A, Mr. R. Lanchester; Class B, Mr. Malcolm Stodart; Class C, Prof. Lambert and Dr. Dashwood. He also commended slides sent in by Messrs. Castle, Rogers, Davis, H. Harvey-George, Howell, and Rogers. The next meeting of the Club takes place on March 20th, when Mr. Charles W. Hastings will show the Prize Medal Slides.

**Maidstone.**—In connection with this society Mr. L. Stansell gave an interesting lecture at the Old Palace on the 4th inst. The subject of the lecture was "Prize Lantern Slides."

**Morley.**—The annual meeting was held on the 3rd inst., the Vice-President (Mr. J. H. Spence) in the chair. The Secretary read the report of the past year, and balance-sheet, which was adopted, showing the Society to be in a healthy condition. The election of officers was the next business, which were as follows:—S. Atkinson, President; J. Sanderson, Vice-President; S. Tomlinson, Treasurer; H. Leathley (Peet Street, Morley), Secretary; Committee, Messrs. Smith, Richardson, and Spafford. The members then partook of a coffee supper provided by the President, Mr. Atkinson. It was decided to have the meetings hereafter the first Tuesday in each calendar month, instead of fortnightly.

**North London.**—At the meeting on the 3rd inst., Mr. Few in the chair, the Rev. E. Healy exhibited a hand-camera, and said that Messrs. Adams and Co., of Aldersgate Street, were bringing out a new improved camera upon the principle of the one shown. Mr. Healy also exhibited his small camera with single lens for taking stereoscopic negatives, and Mr. Bishop explained how, by exposing each half of the plate in its true relative position, the negative could be printed from, and the pictures mounted with true stereoscopic effect without cutting and remounting them. Mr. Hudson also exhibited one of the Newman and Adams latest instantaneous and time shutters with pneumatic break. The annual exhibition, which was unavoidably postponed from the 3rd inst., will take place in the Wellington Hall, on Tuesday evening, the 17th inst.

**Notts.**—Under the auspices of the Castle Gate Literary and Debating Society, Mr. Richard S. Armitage delivered on the 2nd inst. a lecture on "Snap Shots," in which he gave an interesting account of the development of the art of photography. Councillor R. C. Sutton presided, and there was a good attendance. The Chairman alluded to the old-fashioned and awkward methods which had been in vogue for taking photographs, and said they were to be shown that night the conditions under which photographs were now taken, how they could be struck off at once without any preparation on their part, so quickly that their blandest smile could be caught before it had time to vanish away, and even in the most striking positions. He had pleasure in introducing the lecturer, Mr. Armitage, who said it was twenty years since he started photography, showed a number of photographs, taken by the various processes, by means of the oxy-hydrogen limelight; and explained the nature of the latest development in connection with photography.

**Oxford.**—At the meeting on the 3rd inst., the President (Mr. E. A. Ryman-Hall) gave a very interesting exhibition of lantern slides



of sea and cloud views. Other slides were also shown. This exhibition was instead of the President's lecture on "Photo-micrography," which he was unable to give on that evening. At the next meeting, on March 17th, an exhibition of apparatus will take place.

**Phot. Soc.**—On the 4th inst., J. Glaisher, F.R.S. (President) being in the chair, Mr. Leon Warnerke delivered a lecture on "A Simplified Photo-collographic Process," to a crowded audience. Instead of a glass or metal plate as is usual in the collotype process, Mr. Warnerke makes use of a gelatine film supported upon vegetable parchment. He demonstrated the method of sensitising and drying the film, explained the process of printing, and passed round for inspection before and after printing, and after washing with water. He then demonstrated the method of printing, and showed its application to wood engraving, to canvas, and to the decoration of china and porcelain. A short discussion ensued, in which Messrs. J. Spiller, J. D. England, V. Blanchard, and the lecturer took part. The walls of the room were hung with between two and three hundred examples of collotype printing, kindly sent for exhibition by the Autotype Company, Bemrose and Sons, of Derby, the London Stereoscopic Company, Rommler and Jonas, of Dresden, L. Rouille, of Paris, F. Thevoz and Co., of Geneva, and Waterlow and Sons. It was announced that the exhibition would remain open for a month.

**Putney.**—The meeting on the 28th ult. was a lantern evening. March 11th, a lecture by Mr. G. Davison (Camera Club). The 25th will be a lantern evening.

**Richmond.**—The meeting on the 6th inst. was a lantern-night. Mr. F. P. Cembrano presided. Mr. C. Hussey, of Croydon, having happily recovered from his recent indisposition, was present to give his twice-postponed demonstration of the collodio-bromide process, which accordingly preceded the usual lantern business. Mr. Hussey, after a few general remarks upon lantern-slide work in general, and the advantages he claimed for his favourite process, went on to describe very lucidly the *modus operandi*. Starting with the cleaning of the glass, he first showed how to coat a plate, his practice being to use no mineral acid in cleaning, and no substratum in coating the glass for fear of contaminating the emulsion; next three plates were successively exposed, developed, and fixed, and the demonstrator proceeded to illustrate the great advantage which he claimed for his process; namely, that whereas a gelatine plate after development and fixing passes practically out of control, a collodio-bromide plate is, at that stage, as a cliché to work upon, being readily susceptible of almost unlimited variation in density and tone. After Mr. Hussey had been cordially thanked for his valuable and interesting demonstration, and a few remarks from the Chairman on the merits of the rival processes, the lime-light was turned on, and one of the newly made slides was the first to be passed through the lantern, proving to be of admirable brilliancy and tone. Other slides by Mr. Hussey followed, showing a wonderful range of tone, and there were then exhibited slides by Messrs. Williams (a visitor), Ardaseer, Lowry, Davis, Ennis, Irvine, Hodgkin, and Cembrano. Many of these were "first attempts," and as such were considered promising. Next meeting, Friday, 13th inst., "Photometers and Actinometers."

**Sheffield Camera Club.**—The opening meeting of the session was held on the 6th inst., and took the character of a social evening. The President, Mr. G. T. W. Newsholme, in the course of his remarks, made reference to the aims and objects of the club, pointing out that the science of photography could be promoted by the comparison of work and discussion of the various methods of production without the stimulus of competitive exhibitions. He held that the production

of good work should be sufficient reward in itself. During the evening an exhibition of slides by limelight took place of works by Professor Arnold, Dr. Manton, Messrs. Winder, Slater, Copley, and Maleham, and an excellent series of slides by Wilson, lent by Mr. Copley, was also shown. Cameras, stereoscopes, and photographic apparatus of all kinds were exhibited by Mr. J. Preston, Messrs. Chadburn Bros., the Sheffield Photographic Company, and Mr. J. Christie. Ten new members were nominated.

**Sheffield.**—The ordinary monthly meeting was held on the 3rd inst., Mr. B. J. Taylor in the chair, when, after the election of new members, the evening was devoted to the exhibition of the AMATEUR PHOTOGRAPHER 1890 Prize Lantern Slides. Mr. J. W. Charlesworth manipulated the lantern, Messrs. Beck and Hibbert describing the pictures, which were without doubt some of the grandest scenes possible to imagine, views in Switzerland, Italy, Scotland, Yorkshire, etc. Selections of music, both vocal and instrumental, were given during the evening, which was thoroughly enjoyed by the large number of ladies and friends present.

**South London.**—At the meeting on the 6th inst., a paper was read by Mr. W. Groves, on "Shutters," and illustrated by diagrams which he had prepared to show the efficiency of the various makes at present in the market. Messrs. Marion and Co., Geo. Houghton and Son, and Watson and Son kindly lent a number of specimens, and with those brought by the members fully twenty different styles of shutters were on view, a most instructive evening being passed. The society resolved to take part in the exhibition to be held at the Crystal Palace in competition for the challenge cup.

**Southport.**—The usual weekly meeting was held on the 4th inst. Being the first Wednesday in the month, the evening was spent as a "social," when a number of stereoscopic views, also a large assortment of photographic and other interesting novelties were exhibited. Two first-class 15 by 12 negatives of Salisbury Cathedral, and one of "Stonehenge," taken by Mr. Dunmore (the President), were much admired. The society is progressing very favourably. Intending members will receive fullest information on applying to the Secretary, Geo. R. Cartmel, 4, Bradley Street.

**Southsea.**—At a meeting on the 4th inst., Mr. R. Leventhorpe opened a discussion on "Development." After giving his own experience of the various developers in use, he said he much preferred pyro and ammonia for negatives, whilst for lantern slides he liked quinol, provided a full exposure had been given. Messrs. Cobb (Vice-President), Thornton, Ogle, Lemley, and the Hon. Secretary took part in the discussion.

**Sydenham.**—A meeting was held on the 3rd inst., the President in the chair. The Hon. Secretary reported that at the request of the Committee he and Mr. Rumble had attended the meeting of the London and Suburban photographic societies to consider the question of federation. On Mr. Pigott's proposal, these two gentlemen were requested to again attend as delegates on behalf of the Club, and to act as they thought best in its interests. At 8.30 the lantern was started, and a number of slides by various members were exhibited and commented upon.

**Wolverhampton.**—The usual monthly meeting was held on the 3rd inst. Mr. H. Holcroft occupied the chair. Mr. Lees was elected, and Messrs. A. C. Lloyd and Laythe were proposed as members. The "Illustrated Boston" slides were exhibited, and Mr. H. E. Perry undertook to read the lecture accompanying the slides. The usual vote of thanks was given to the Boston Camera Club, Mr. H. E. Perry, and the lanternist, Mr. Derrington.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance, the *number and full title of the query* referred to.

## QUERIES.

4552. **Positives.**—Would anyone kindly tell me how to make the formula and developer for taking positives on glass or metal?—A BEGINNER.

4553. **Dry Plates for Positives.**—Would any reader kindly inform me where I could purchase these plates in England, for making positive pictures? Are they manufactured in America. Cannot get to know name of agent in our town.—NOTTINGHAM.

4554. **Hayes, Kent.**—Can any reader inform me as to places of interest in the neighbourhood, suitable for photographing?—A. S.

4555. **Printing on Wood.**—Will any brother amateur tell me how to print from a negative on to wood, as I want to have a printing block made from it; also which wood is the best to use?—W. J. NEWBY.

4556. **Walking Stick Stand.**—(1) Can any one

tell me of a reliable walking stick stand not more than three feet in length when closed, and extending to five feet? I do not want one which requires guy ropes, etc. (2) Can any one tell me of a skilful man who would carry out a design for a walking stick camera stand?—EBORACUM.

4557. **Red Tones.**—How can red tones be obtained with Thomas's lantern plates? The solution recommended by the makers for developing gives red tones which dry to a purple colour.—E. M.

4558. **Portraits.**—Is it better to take a portrait (I take them out of doors) with a slow plate and large stop or with a rapid plate and small stop, and what would be the exposures for this time of the year?—M.

4559. **Lens.**—Why is a single lens better for landscape work than a double one?—LENS.

4560. **Varnish.**—Would any reader kindly give a cheap recipe for paint or varnish (or both) for inside of dark box, to resist the action of water and chemicals?—G. H. S.

4561. **Copying.**—Would anyone kindly tell me how I can copy a mounted e.d.v. on a quarter-plate negative? Any hints will be acceptable. I have a half and a quarter-plate camera.—CHESTER.

## QUERIES UNANSWERED.

March 6th.—Nos. 4548, 4549, 4550, 4551.



## ANSWERS.

4500. **Coloured Glass Luminous.**—The only plan would be to paint it with a luminous paint, like Balmains, but as the colour of this light is blue and the spectrum is a narrow band between G and F in the blue, it would be practically useless for red and yellow.—OSIRIS.

4503. **Fog.**—Try a fresh paper.—WILLEE.

4503. **Fog.**—This is rather a difficult question to answer; probably the paper is of poor quality, or it may be that too strong a light was used for printing. Why not send the negative and print to the Editor, and ask his advice?—OSIRIS.

4506. **Artistic Lighting.**—Get H. P. Robinson's valuable little book, "The Studio and What to Do in It." This will tell you all you want to know and a lot more.—OSIRIS.

4506. **Artistic Lighting.**—Write me through Editor, and I will reply by letter.—WILLEE.

4509. **Kaleidoscope.**—A simple one can be made by merely placing beads, coloured glass, etc., between two lantern slide covers and making it turn round by means of an endless screw. One like this can be obtained from almost any lantern dealer for 5s. 6d., but a complete kaleidoscope costs 37s. 8d.—OSIRIS.

4510. **Hypo and Alum.**—According to Mr. Wall's article, p. 116, Feb. 15th, chloride of magnesium cannot replace hypo in the combined toning and fixing bath, and he has also stated that the use of tannin for hardening gelatin-chloride prints turns them yellow.—OSIRIS.

4512. **Coating Waste Plates.**—The cause of your poor results with plainly salted gelatine is due to the combination of the gelatine with the silver. The only plan to get good results is to make a gelatin-chloride emulsion like Aristotype paper and coat the plates with this. Formula will be found in Wall's "Dictionary of Photography," 2nd edition, p. 101, et seq.—OSIRIS.

4512. **Coating Waste Plates.**—To do this you must learn how to make emulsion, which, without you have a lot of spare time, I should not advise you to do, for in the end you will find it cheaper to buy new plates.—WILLEE.

4514. **Shutter for Detective Camera.**—Mawson and Swan, 33, Soho Square, London, have one of this kind called Soman's, which is a very good one.—OSIRIS.

4514. **Shutter for Detective Camera.**—Write to Marlon's, and state what you want. They have a shutter to suit you, and works from 1,000th part of a second up to any length of time.—WILLEE.

4517. **Relief Seals from Photographic Negatives.**—See p. 170 of AMATEUR PHOTOGRAPHER, March 6, or you could use either the wash out or swelled gelatine process.—OSIRIS.

4517. **Relief Seals from Photographic Negatives.**—Write to Mr. Wall through Editor; he may assist you.—WILLEE.

4519. **Frames for Quarter-plates.**—Brown, Scott, and Co., 254, High Holborn, E.C., quote quarter, half, and whole plate black and gold frames.—OSIRIS.

4520. **Hand Camera.**—In the "British Journal Photographic Almanack," 1890, page 584, you will find what you want.—WILLEE.

4521. **Interior.**—Ross' No. 8 P. S. lens is only 10 in. focus, and would therefore be a wider angle than necessary. If you used a 15 in. focus lens you would have rather less of the subject included, but the perspective would be more pleasing.—OSIRIS.

4521. **Interior.**—You are using a lens with too short a focus; an ordinary 15 by 12 R.R. would suit the work much better. Stop it down to  $f/44$ .—WILLEE.

4522. **Robinson's Developer.**—A great deal depends upon the plate you are using. The best method to increase the density is, when all detail is out, to add a full dose of pyro and bromide and allow to act.—OSIRIS.

4522. **Robinson's Developer.**—I have used this with success. Your want of density is through not using sufficient pyro solution, thus, after getting out all the detail, add 1 dr. more pyro solution and wait for the density.—WILLEE.

4523. **Platinotype, Sepia Tones.**—(1) The addition of 1 per cent. of mercuric chloride to the developer is stated to give sepia tones. The hot bath is said to give the best results. (2) Yes, to be obtained to order. (3) By using a cool solution and allowing it to act longer; a great deal also depends on the negative.—OSIRIS.

4523. **Platinotype, Sepia Tones.**—You will find L. Clark's "Platinum Toning" very useful to you, published by Hazell, Watson, and Viney, Ltd., 1, Creed Lane, E.C. price 1s.—WILLEE.

4524. **Lantern Slides.**—Expose a plate to very weak diffused light for a brief moment, then develop with a weak pyro developer, fix, and wash well; this gives a beautiful fine focusing screen. There is no advantage in using a stop, provided the image is sharp without it.—OSIRIS.

4524. **Lantern Slides.**—Take out your ground-glass and put in the place of it a clean negative glass without scratches; to see anything on it, you must use a focussing glass, when you will be surprised at the amount of detail you can see. Use stop  $f/22$ .—WILLEE.

4526. **Development for Bromide Paper.**—Dip a camel-hair brush in your bromide solution, and

lightly brush the portions you want to stop coming up too quickly.—WILLEE.

4526. **Development of Bromide Paper.**—10 per cent. solution of bromide of potash applied with a brush.—OSIRIS.

4526. **Mountant.**—Good stiff starch paste.—OSIRIS.

4527. **Hire of Studio.**—So far as I am aware, this cannot be done, but I should apply to a rather small professional and ask him, as a man with a not very large business might be glad to make something in that way.—OSIRIS.

4528. **Development, Hand-Camera Negatives.**—Try Chapman's, of Manchester, Eiko-cum-hydro formula, which has given me excellent results when used at a temperature of 50 to 60 degs. F.

Hydroquinone ... ..	40 gr.
Eikonogen ... ..	120 "
Sodium sulphite ... ..	480 "
Citric acid ... ..	20 "
Distilled water ... ..	20 oz.

(B).

Potassium bromide ... ..	5 gr.
Sodium carbonate ... ..	60 "
Sodium hydrate ... ..	30 "
Distilled water ... ..	20 oz.

For use, mix in equal parts.—OSIRIS

4529. **Frames for Quarter Plates.**—Write to Slater, frame maker, Southampton Street, Camberwell, for price, which will be higher than carte-de-visite size, which are mostly German made.—WILLEE

4530. **Black Tones.**—Add 1 dr. to every ounce of the ordinary ferrous oxalate developer, expose at three feet from gas flame, giving relative increase of exposure. Short exposure and strong in iron developer will give black tones.—OSIRIS.

4531. **Optimus Hand-Camera.**—An excellent instrument, well worth price, of good workmanship and very efficient.—OSIRIS.

4534. **Saturators.**—See the "British Journal Almanac," p. 401, 1890.—OSIRIS.

4535. **Reflex Camera.**—The camera is an excellent practical one, and is fitted with a 5 by 4 Optimus, and is of good workmanship except the slides, which might be improved. Shutter from about  $\frac{1}{100}$  to  $\frac{1}{1000}$  sec. Results are very good.—MEMNON.

4537. **Borax Bath.**—Almost any make gives good results with this bath. Edwards, Scholz, Blackfriars Company, Written, etc.—OSIRIS.

4537. **Borax Bath.**—Spicer's paper will suit the above.—WILLEE.

4538. **Studio, Lighting of.**—See answer to 4508.—OSIRIS.

4539. **Cutting Mounts.**—Can trace no directions for cutting mounts anywhere. Send stamped addressed envelope for instructions for oval drawing.—OSIRIS.

4540. **Hand-Camera.**—We would be pleased to lend one of our Companion hand-cameras to "Hoyer."—FARRER AND CO.

4540. **Hand-Camera.**—Try Lawley's, Farringdon Road, or Sands and Hunter, Cranbourn Street, Griffin's, Garrick Street, Covent Garden, or advertise in the Exchange Column.—OSIRIS.

4540. **Hand-Camera.**—Write to G. A. Taylor, Queen Victoria Street. They used to lend out kits on leaving the value of them.—WILLEE.

4541. **Dark Tent.**—Try the Optimus umbrella, price 25s. Shew's changing box, 12s. 6d.—OSIRIS.

4542. **Ebonite Trays.**—Try P. B. Cowhill and Co., Cheapside, or the City Rubber Company, Queen Victoria Street.—OSIRIS.

4543. **Barnett's Dark Slides.**—Certainly Barnett's slides are good, very good, far ahead of the clumsy wooden ones. If you use films, they are just what you require; your "kit" will also be considerably reduced in weight.—J. B. ELLAM.

4544. **Developers.**—(1) Notwithstanding its disadvantages and the host of rivals that have sprung up of late years, the old pyro-ammonia or pyro-potash still seems to be the general favourite for all-round work, but, (2) in the hands of a beginner, a made-up hydroquinone developer would perhaps prove more advantageous, owing to the great latitude it leaves for exposure, and its being less liable to stain than the foregoing.—WIZARD.

4544. **Developers.**—(1) Hydroquinone and hintonone. (2) Hintonone, as it is a simple and reliable developer, sold in 5 oz. bottles, for two and a half pints of developer, by Messrs. Hinton and Co.—B. W.

4545. **Permission to Photograph.**—Permits are granted for Hyde Park, Kensington Gardens, St. James's Park, Green Park, Greenwich Park, Richmond Park, Bushey Park, and Hampton Court Palace and Gardens upon application by letter to H. W. Primrose, Esq., H.M. Board of Works, Whitehall, S.W., available for six months. For Victoria Park, Battersea Park, Embankment Gardens, and all open spaces under control of County Council, H. Delahouke, Esq., Clerk to the Council, Spring Gardens, S.W., available till end of year. For Kew Gardens, the Director, Royal Gardens, Kew, for one year. Windsor Great Park and Virginia Water, Captain Walter Campbell, Holly Grove, Windsor Park, Windsor, available for fourteen days.—A. NAYLOR.

4548. **Mounting Opals.**—Having soaked a little of Nelson's soft gelatine, melt in a hot-water bath, and

pour into an open dish. Take the print by both ends, bring them together, forming a bow with the face outwards. Now gently float on the gelatine, letting the centre touch first, and gradually lowering the ends till it lies perfectly flat, face downwards. Gradually slide the glass under the print and having got the latter into position, gently lift the glass and squeegee into optical contact and allow to dry.—WIZARD

4548. **Mounting Opals.**—The best method is as follows: Take a piece of good glass and a porcelain dish which will hold it; then make a solution of gelatine as follows: pour over 300 grains of hard gelatine, half-pint of cold water, when quite soaked pour off and with hot water make up to 10 oz. If the heat is not sufficient to melt gelatine, place near fire until temperature is 120 degs., pour the gelatine over the glass plate until  $\frac{1}{2}$  in. above it (glass); soak print in water until quite soft, and place face downwards in solution. Now take the glass and print out of the gelatine and apply a squeegee to back of print so as to press out superfluous solution (or for small prints if pressed out with ball of thumb will do just as well). (Do not put a second glass on back). When dry it is ready to be framed, etc.—CHAS. SHER.

4547. **Victoria, Australia, Photographic Apparatus for.**—You will find the "Itakia" magazine camera the most suitable for this climate, owing to its being made entirely of metal. It carries twenty-four plates and is very light in weight.—R. V. FISK.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PROT:

**NOTE.**—In this column we cannot advise upon purchase of APPARATUS, PLATES, PAPER, or PHOTOGRAPHIC MATERIALS.

Advice will be given upon questions of "Photographic Procedure," negatives and prints will be criticised, and every help given to the worker in photography.

A. E. VENN.—Why not write to the Photographic Dealers and Manufacturers' Association?

H. F. C.—"Art of Retouching," by J. Hubert (Hazell, Watson, and Viney, London, 1s., cloth 1s. 6d.), is the most practical book. Take them to an optician's; if the scratches are only slight, they will not affect the picture. At any good firm of lantern manufacturers.

C. P. ARMSTRONG.—Have written to you.

MAJOR A. DOWDALL.—Will try and write you next week; cannot spare time this week.

W. A. BOOKLEY.—We cannot undertake to recommend cameras by letter or in any other way than that described in the "Note" at the head of this column.

C. BALLARD.—To ensure insertion, reports should reach us at latest on Tuesday mornings.

FREDERICK.—Short notice in AMATEUR PHOTOGRAPHER of January 23rd.

C. HETHORN LEWIS.—All right; by all means if you will kindly point out the faults.

A. D. GUTERIE.—Duly received your letter. Will certainly do as you suggest.

S. MANSELL.—Print to hand; many thanks.

F. C. CURRY.—Your letter has been mislaid; please repeat queries.

F. TURNER.—Write to Mr. Gambier Bolton, at the Camera Club, Charing Cross Road.

W. O. S.—See the note at the head of this column.

THE PROFESSOR.—The reason of the curved lines is that you were too close to the object. The lens cannot be altered. With respect to your last question, see the note at the head of this column.

S. FRANCIS CLARKE.—Thanks for letter. The suggestion shall have our consideration.

ELECTRA.—See notice at the head of this column.

UMBRIA.—(1) Yes. (2) Yes. (3) No. 2.

R. C. G.—The spots are metallic silver reduced by splashes of some liquid; had you any ferrous oxalate or pyro developer handy? (1) Fair, wants rather deeper printing, and half inch of foreground off won't hurt. (2) Very soft, but spoilt by the movement and the patchy background. (3) The boat should have been in the left-hand corner so as to break the water up a bit more, otherwise good. (4) Very poor. (5) A fair evening effect if printed well, the posts might well have been more included.

P. R. S.—There is certainly the germ of good work in your prints; a little more patience, perseverance, and attention to minor details will improve matters. (1) Good, only the whole edifice is toppling over towards the left; you want a level or plumb indicator. (2) You evidently wish one to have an idea of sunshine from the cloud, which is not good; the rest of the print is extremely dull and monotonous, the bits of trees do not improve it. (3) Not so bad. (4) Very flat, over-exposed and under-developed negative. (5) Very fair; the softness is by no means unpleasant in effect. (6) Good,



(7) Flat and over-exposed; could have been improved in developing; your sitters are all too fond of staring in the lens. (8) Bad, the long wall is utterly devoid of any artistic properties. (9) Rather flat, too much foreground. (10) Good. (11) The whole edifice again on the slant. (12) Very bad, a plate utterly wasted. (13) Poor. (14) A good representation of a backyard corner with a sitter. (15) This sitter evidently was uneasy somewhere. (16) Capital, a few like this redeem your work.

**HYPO.**—There are special bromide pencils sold by most dealers specially for retouching bromides. You might try soaking the print in a weak solution of chlorine of gold, about 1 gr. to the pint; this will sometimes improve things.

**RESUMÉ.**—(1) To explain this thoroughly will require more space than we can spare; briefly, the sensitive salt of silver affected by light is reduced to the metallic state by the alkaline solution of pyro, the halogen set free combines with the alkali, and the pyro is oxidised. (2) The advantage of stock solutions is that it is not necessary to weigh out your pyro every time; sodium sulphite prevents the spoiling and staining of the pyro; in the formula you give the sulphite is in the wrong solution to be of any use. (3) Use a slow plate, and place it in contact with the negative; expose to the light of a lamp or gas about 3 feet off for a short time, then develop with ferrous oxalate.

**C. CHURCHILL.**—(1) Yes, quite satisfactory, and no special objection. (2) It will keep well. (3) Yes. (4) It is not likely to get out of order. (5) No.

**J. E. THORNBURN.**—We have not yet seen the camera, but hope to do so shortly.

**W. R.**—8, 7, 6, 5, 4, 3, 2, 1. Glad you are so satisfied. You must not be hard on beginners.

**SANDS.**—No. 1. This is due most probably to the bad light. The instrument is all right. The negative is very much under-exposed. No. 2. The indistinctness in the eyes is probably due to movement of the same. No. 3. We should like to see the negative before we express an opinion on this. The toning solution is all right. Wash the prints in plain water first. Always pleased to help you. Let us see some more work when the light gets better.

**W. S.**—You cannot improve upon the lenses you have named, though you will hardly need the single landscape wide angle. Always glad to be of service.

**H. K. GLAZEBROOK.**—We will write you by post.  
**J. W. C.**—We know of no such firm, nor can we trace it at all. If you like to send us the lens we will examine it for you.

**H. HAMMOND.**—Is this the only plate that shows this defect? Notwithstanding your letter, we still think it is dust; try we again.

**H. S. W. B.**—(1) Do you mean with lens complete; send us an addressed envelope, and we will write you. (2) Certainly the fixing bath for prints must be distinctly alkaline. (3) About 12 in. The flash is not better; we prefer the instantaneous for this work. (5) The only thing to do is to soak in water till it leaves the mount without any trouble.

**QUESTER.**—Send addressed envelope, and we will write you.

**J. THOMAS.**—Focus for the required figure, getting it as large as possible, then on the negative paint out everything but the figure with black varnish.

**C. H. S. (New York, U.S.A.)**—Neither camera is suitable for stereoscopic work; you must have a square bellows for this. We should advise you to get D holder. If you like to send a list of instruments we will state the most suitable, or will write you privately.

**SPIKE.**—The plates were fully exposed, but wrongly developed. The formula is all right. The plates show 15 on Warnerke's sensitometer. Add your accelerator by degrees.

**VIC.**—You do not state the aspect of your window. We should advise pasting deep ruby paper on the window and make a curtain of ruby medium to draw over it when light very bright. (2) We should prefer very stiff starch paste to glue, which might affect the prints.

**W. T. BARTON.**—(1) We prefer first a sheet of ground glass, then a sheet of deep orange and then cathedral green glass. It sounds rather as though the slides were at fault. (2) Stick to pyro, make up the stock solution of pyro and dilute as wanted. Try the American standard accelerator given in "Dictionary." (3) The print was very good indeed; we like to see such work, also (4 and 5) Do you mean portrait or landscape? you must be governed solely by the effect. Write us again if not quite clear on what we have said.

**B. A. SMITH.**—The instrument named is as good as any at the price, and the lens gives good results, and the question as to the work being up to competition standard, depends more on the user than the lens; the one in question is about 8½ in. focal length. About 45 degs. About 9 or 9½ in. would be about right. The R.K. lens is a doublet, you cannot therefore, compare it with a totally different lens.

**A. STRADLING.**—There is no difficulty in doing what you want. Make a transparency on a lantern plate by contact printing from your small negatives, then enlarge from this on a 12 by 10 plate coated with an emulsion as used for lantern plates, using No. 3 lens, and develop with a well restrained pyro and ammonia developer. You would find it cheaper to get an enlarged negative made for you by one of

our advertisers. Still the albocarbon light is preferable to daylight. The slow bromide paper is eighty times slower than the ordinary plate. You ought to get excellent results, judging from the print you send. We shall be pleased to help you further if necessary.

**FESTINA LENTE.**—Monday is our reception day, from two to five; can you give us a look next Monday? In the meantime we will try plates. If you cannot call, then let us know developer used and fixing bath.

**H. W. THORNTON.**—Your bar is a little too hot, and the handle should be turned from you. We should advise you to use a lubricant. Practise on a few plain cards first.

**T. HALL.**—Probably your solutions are too cold. Try water at 70 deg. F., then write us again, and let us know what formula you use, and paper.

**NOVICE.**—Both your sitters are a little too serious, and the half-open mouth spoils it; still, very fair, considering conditions. The avenue is very good. Here is what you want, from Wall's "Dictionary of Photography":—

Chloride of gold...	15 gr.
Common chalk...	150 "
Chloride of lime...	24 "
Lime water...	15 oz.

Add the gold to the chalk, make into a paste with a little lime water, and leave for one hour; filter, and wash the filter with the remainder of the lime water, in which is dissolved the chloride of lime. Add 1 oz. of above to 10 oz. of water for every sheet of paper. The prints must not be absolutely free from silver before toning; wash for five minutes only.

**FIRST ATTEMPT.**—O: A little bit under-exposed, and you don't want the figures. Very good, however; let us see some more work in a month. D: Certainly stick to one developer.

**YORKSHIREMAN.**—(4) Long focus about one and a-half times the longest side of plate used. (5) The portrait is good. How on earth did you get that tone? Try your luck in a competition, by all means, only don't get that tone again.

**J. H. TAYLOR.**—Book packet not yet to hand. We will note next week, if too late for this.

**J. THOMPSON.**—The idea is by no means new. The old developer may be used, but, of course, it gives somewhat harder pictures, as it contains more bromide from the exposed film. Many operators prefer, however, to use the old developer, with one-fourth new either mixed with it or else added towards the end of development. There is no authoritative record of how long an old developer will keep; about a fortnight, perhaps. A one-solution developer is by no means new. The following is given in Wall's "Dictionary":—

Neutral oxalate...	2,600 gr.
Ferrous sulphate...	975 "
Citric acid...	100 "
Boiling distilled water...	20 oz.

¼ oz. of this, diluted with 6 drms. of distilled water, is about the usual strength. A one-solution developer can also be made by adding dry ferrous oxalate to saturated solution of neutral oxalate till it is no longer dissolved, and then excess is added, and allowed to stand 24 hours and used as above.

## Quarterly Examinations in Photography.

### QUESTIONS.

25. A gelatino-chloride and an albumenised paper print will be forwarded to you, and the same must be returned toned, fixed, washed, and mounted, with method of procedure, and any remarks you may think necessary on the prints from an artistic as well as the technical standpoint. If by accident a print should be spoilt in the manipulations it must still be returned.
26. What are the arguments for and against the adoption of the metric system of weights and measures? (Limit, 350 words.)
27. Give the formulae for conversion of metric weights into English weights, and vice versa, and what is the recommendation of the Photographic Convention as to the bulk of stock solution formulae and their strength?

(Latest Day for Answers—March 23rd.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
2. All answers must be preceded by the question,

and should be written on one side of the paper only.

3. A *nom de plume* may be used, but in every case the full name and address must also be given.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"

AMATEUR PHOTOGRAPHER,

1, CREED LANE,

LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**Backgrounds.**—Two backgrounds in flatted oils, on linen and roller, garden scene, with graduated centre, size 8 ft. by 8½ in., price 15s.; garden scene, with foliage, size 8 ft. by 7½ in., price 12s., quite new and perfect; photographs forwarded.—Address, William Hare, Photographer, Sutton, Surrey.

**Bicycles.**—Rosebery Safety, 30 in. wheels, tangent laced spokes, hollow rims, 3¼ in. tyre, semi-racer, geared 60 in., ball wheels, crank, bracket and pedals (rat trap), with lamp, etc., 38 lbs.; the reason owner wants to dispose of above is that he is going in for racing, and through no fault of machine; price £8; further particulars on application.—Can be seen any time at 66, Newington Butts.

Sarley and Sutton's Rover safety, special made, double brake handles, ball bearings everywhere, including pedals, central carrier for half plate camera, lamp, bell, accessories, good as new; sell at half the cost.—Putland, Tunbridge Wells.

Safety bicycle, cushion tyres, balls everywhere; £7 10s.; just cost £14; approval with pleasure.—Cyclist, 7, Dereham Road, Norwich.

**Burnishers, etc.**—Burnisher, whole-plate, good condition, with 3-wick lamp, cost 50s., take 20s.; also good stereoscope and 12 interesting views, all new, cost £1, take 10s.—Taylor, Photographer, Worksop.

Burnisher, Tylar's 9 in., good condition; 9s.; cost 16s.; write—Upton, 33, Finsbury Circus, London.

9 in. burnisher, as new; cost 35s.; take 10s. 6d., or exchange.—Christie, Staines.

**Cameras, etc.**—Half-plate camera (by Stereoscopic Company), perfect condition, with 3 double dark-slides; £4; deposit; approval.—W. Turner, Woodville, Lytham.

McKellen's patent half-plate camera, five double slides, turntable, legs, and leather case; cost £14; bargain, £8.—Knowles, Chemist, Cleckheaton.

Whole-plate camera (by Oadwick), quite new, with six Barnett's slides and Platt's new turntable and stand, conical bellows, long extension, and reversing back; cost £8; will sell for £6; approval with pleasure.—No. 123, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Watson and Sons' 10 by 8 Premier camera, in solid leather case, with one double dark-slide, two inner frames for taking half plates, two printing frames, Ashford tripod, all new; price £11; no cards.—Crags, St. James Villa, Maidenhead.

Lancaster's international, quarter-plate, Iris diaphragm, instantaneous shutter, tripod, two wooden slides metal slide, and adapter; 39s.—Archer, 100, St. Paul's Road, London, E.

Lancaster's special brass-bound Instantograph, three brass-bound double backs, See-saw shutter, tripod, etc., complete perfectly new, in case, with lock and key, also dishes, printing frames, etc.; 70s. the lot.—Edwin Jewitt, Matlock Bridge.

Sands and Hunter's Exhibition quarter-plate camera, new last month, focusses to 13 ins., every possible movement, three best slides, and tripod stand; £5; list price £7.—Hodges, 87, Chancery Lane.

7½ by 5 parallel, long extension, double pin on camera (by Reynolds and Brauson), three back slides, Eastman roll holder, Funnell's shutter, black leather bag for camera, and solid leather case for slides; cost £17 17s.; price £10 10s.; a real bargain.—Smeeton, 13, Broomfield Road, Leeds.

Lancaster's whole-plate 1883 Special camera, perfect condition; approval; deposit; lowest £4, or exchange good half-plate set with rectilinear lens.—Toth, Stephen Street, Rugby.

Lancaster's 1890 International half-plate camera, with three dark-slides (no lens or stand), perfect condition; list price 88s.; bargain, 65s.—G. Beddow, Sutton, Surrey.



Good half camera, slides, lens optional, compact, cheap; full particulars.—88, Albert Road, Croydon.

**Cameras, Lenses, etc.**—Camera, quarter-plate, seven double dark-slides, rectilinear and wide-angle lenses instantaneous and Ponce's shutter, tripod, quantity dishes, chemicals, printing frames, books; 80s.; cost 1/0s.; best London-made, warranted perfect.—Hands, Suffolk Street, Birmingham.

Splendid Victoria camera and four lenses, takes four on quarter-plate, or eight on half-plate; cost £8; will sell or exchange for Tourist half plate, difference in cash.—Institute, Marsden, Huddersfield.

Cusson's half-plate Tourist camera, rapid rectilinear lens, two double dark-slides, tripod, rising front, double swing-back; 90s.—8, Hounsfield Road, Sheffield.

Watson's half-plate Tourist camera, three double backs, R.R. and W.A. lenses, leather case, tripod, pneumatic release, drop shutter; cost £15; price £9.—Arthur Weston, 7, Angel Road, Brixton, S.W.

Lancaster's 1889 Instantograph, with window shutter, lens, stand, etc., complete, £4 2s., for £3 10s.; extra slide, 12s. 6d., for 8s.; three metal double dark slides and adapter, 14s. 6d., for 8s.; changing bag, 12s. 6d., for 7s.; all half-plate, and guaranteed in good condition.—Fred Fenwick, Jesmond Dene, Newcastle, Northumberland.

Followfield's Facile, leather covered, 5 by 4 rapid rectilinear lens four stops; £5.—M. O. Forster, 32, Binfield Road, Clapham.

Lancaster's Instantograph camera, 10 by 8, lens, with shutter, waterproof bag, Watkin's exposure metre, useful burnisher; lot £3 10s.—Cleaton, Spring View, Wigan.

Lancaster's half-plate Le Meritoire camera, rack-work lens, double back and carrier mahogany folding tripod; 37s. 6d.; lens and tripod optional.—F. Elkin, 5, Kemble Road, Croydon, Surrey.

**Camera Cases.**—Leather detective case, with instantaneous shutter, to carry Lancaster's quarter-plate Instantograph; cost 21s. last autumn; sell or exchange.—74, Metal Street, Cardiff.

**Dark Slides.**—Double dark-slides, three Tylar's full plate, for sale; exchange for violin, or lantern accessories, slide tinter, microscope, or kaleidoscope.—Apply, Rev. Dunnett, Bilston.

**Enlarging Apparatus.**—Shenstone's enlarging apparatus for sale, complete, and in good condition, only once used, no condensers required; price £3; the apparatus, being somewhat cumbersome, will not be sent on approval, but is guaranteed.—No. 122, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London E.C.

**Hand-Cameras, etc.**—Kerr's patent hand-camera (12 quarter-plates), without lens; price £2; approval on deposit.—W., The Coppice, Beechfield, Bowdon.

No. 1 Kodak, almost new, in leather case; price 50s.; cost £5.—S., 4, Seville Street, Lowndes Square. Guinea hand camera, fitted with Eastman's quarter-plate roll-holder, pneumatic shutter, finder, and three double backs, takes pictures 4½ by 3½; cost £3 12s.; take £2; only used twice.—London, 70, Pilgrim Street, Newcastle-on-Tyne.

Shew's quarter-plate Bolipase hand-camera, with double backs for eight plates, tourist leather case and sling, four-fold ash tripod stand (by Hume, Edinburgh), in first-class condition; £6; approval; deposit.—Welch, Crossgate, Cupar, Fife.

Hand-camera, for pictures 2½ by 2, in case, covered with good leather, 8½ ins. by 4½ by 4½; the bellows camera with three double backs and rapid rectilinear lens (all by Wratten and Wainwright), and Thornton-Pickard shutter, enclosed in box as above, with finder, most handy and compact, and beautifully finished; cost £10; only reason for selling, want larger size; condition good as new.—H. K. Glazebrook, Melling, near Liverpool.

Rouch's Eureka, perfect condition; cost £6 8s.; price £5.—Apply, Miss O. Gilpin-Brown, Sedbury Park, Richmond, Yorkshire.

Hand-camera, Samuel's quarter patent, new, 42s.; rectilinear lens, 7 by 6, hood, stops, working f/8, 25s.; canvas camera case, strong, good straps, leather-fitted, 9s.; approval.—1, Hermitage Mews, Stamford Hill, N.

For sale, or exchange for salmon tackle, Rouch's quarter-plate hand-camera, in leather case, improved shutter, detachable plate reservoir, and extra long extension to suit any lens.—E. J., 13, Bell Street, St. Andrews, N.B.

**Lanterns.**—Biunial, brass fronts, mahogany body, four doors, 4 in. condensers, portrait lenses, safety jets, slides, new last season; what offers?—Greaves, Hudding Street, Oldham.

Eastman's 110s. enlarging lantern, cash, or exchange half-plate set.—Simpson, 48, Old Nelson Street, Lowestoft.

**Lenses, etc.**—For sale, a pair of Harrison's Globe W.A. lenses, 3 in. focus, cost £4 16s., price £2 10s.; Levi's portrait lens, 15s.; Lerebours and Secretan's quarter-plate portrait lens, 15s.; quarter-plate portrait lens, 10s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

Dallmeyer's 6D, No. 12909, perfect condition.—Offers to Sanitas, 82, Jenkin Road, Brightside, Sheffield.

A splendid Lerebours 5 by 4 portrait lens, cost £4 10s., first offer for 25s.; also quarter-plate Abra-

ham's Liverpool, cost £3 10s. recently, great bargain, £1; both guaranteed.—Lloyd, 98, Kensington, Liverpool.

Ross' No. 5 portable symmetrical, £4; whole-plate Furnell's shutter, 18s.; both new last season.—H., 55, Val Pleasant, Jersey.

Dallmeyer's No. 2B portrait lens for £5 10s., good condition.—Lux, care of Werge's Photographic Stores 11A, Berners Street, London, W.

Half-plate rapid rectilinear f/8 lens, Waterhouse stops, good condition; 21s.—H. Rowe, Wallbridge, Stroud.

Rapid symmetrical whole-plate lens (by Ross), little used; price £5.—Captain Fleming, United Service Club, Edinburgh.

Ross' No. 3 portable symmetrical, 5 in. focus; 50s.—Abbott, 36, Pilrig Street, Edinburgh.

**Negatives.**—50 quarter-plate negatives; sell cheap.—Hughes, 3, Colville Gardens, Bayswater, London.

**Sets.**—1891 Lancaster's quarter-plate Le Merveil-leux set, new; bargain, 15s.—Wm. Wallace, 9, Clifton Street, Glasgow.

8 by 5 R.R. lens, Waterhouse diaphragms (by Spicer), for 35s.; quarter-plate ditto (Newton), 15s.; bamboo walking-stick tripod, 15s.; Lancaster's half-plate brass-bound Instantograph set, 90s.; all perfect, and in good condition.—Moore, 7, Market Square, Hanley.

Half-plate 1890 Instantograph, three double slides, R.R. lens, Thornton-Pickard foreground time and instantaneous shutter, and folding tripod, all in excellent condition; price £5.—Chappell, 12, Anhall Road, Battersea.

**Shutter.**—Kershaw's Instantaneous shutter for sale, 2½ in. diameter, only used once; price 15s.—Charles Shaw, Blantyre by Glasgow.

**Slides.**—Pumphrey's half-plate Multiplex slide, holding 12 negatives, excellent; 17s. 6d.; approval. Rev. Page, Torquay.

**Sundries.**—Lantern, 4-wick lamp, 4 in. condenser, lens, and microscope attachment; exchange whole-plate camera, without lens or stand.—Lamb, 140, Northbrook Street, Liverpool.

22 whole-plate negatives, views of Holy Land, splendid pair opera or field glasses, dark-room lamp, very fine half-plate R.R. lens, cash or useful exchange.—Jones, Eoifield House, Uffculme, Devon.

Carson's spring carrier, 12s. 6d., cost 18s. 6d.; Sun-beam safety, balls all over, including head, new last season, list price, including lamp, etc., nearly £19; price £11, or exchange for good double extension whole-plate complete set and cash.—Pringle, 34, Arundel Square, N.

"Photographic Reporter," Nos. 11 to 28 inclusive, unbound, as new; cost 12s.; price 7s.; bargain; buyer pays carriage.—Cecil Allen, East Park House, Southampton.

Vols. viii., ix., xi., and xii. AMATEUR PHOTOGRAPHER, 2s. each; also "Year Books" and "Journal Almanacs," 1887 to 1891, 6d. each.—T. O. Hosking, 35, Pavlet Road, Camberwell.

One condenser, new and perfect, cost 84s.; one rolling press, hot or cold, cabinet, cost 60s.; whole-plate Tylar's rack and tank, Marion's "Guide to Photography," "Silver Printing" (Abney and Robinson), Marion's "Photo-Mechanical Printing Processes" (Burton); what offers for any or whole or above? great sacrifices.—Amateur, 16, Lansdowne Gardens, South Lambeth.

For sale, a few ten per cent. preference shares in Eastman Photographic Materials Co., Ltd.—Apply to No. 124, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Views.**—Peak of Teneriffe, Great Caldera of Palma, views.—Soar, 1, Sussex Villas, Kensington, London, W.

## WANTED.

"Amateur Photographer," posted regularly weekly from 20th February, cheap.—Copeman, Henstridge.

AMATEUR PHOTOGRAPHER, vols. xi., xii., bound, state lowest price.—Hyde Parker, 37, Burton Road, Derby.

**Cameras, etc.**—10 by 8 camera, Lancaster's preferred, cash, or part exchange half-plate International.—T. Moore, Malling Road, Snodland.

Half or whole plate camera, exchange only.—Greaves, 1, Ridding Street, Oldham.

7½ by 6 camera, preferably Watson's Acme; state price and particulars.—Dr. Roberts, Glyn Rhondda, Porth, Glamorgan.

**Cameras, Lenses, etc.**—Camera, half-plate, state maker, accessories, condition, price; also 7 by 8 Optimus Eyroscope, or other good lens.—Nicolson, 4, Holmhead Terrace, Oathcath, Glasgow.

**Hand Cameras, etc.**—Adams' ideal detective, 12 plates, Wray's R.R. preferred; state lowest; full particulars.—J. B., Hazel Bank, Sydenham Hill.

Hand-camera, of thoroughly good description, in exchange for Rudge Rotary tricycle, cost £20.—Mr. Oxford, Devizes.

Detective camera, quarter-plate.—H. P., South Beach Lodge, Great Yarmouth.

To hire hand-camera from March 24th to about 31st.—Particulars to R. Leversuch, Stanmore, Middlesex.

Lantern, in good condition.—C. H., 78, Isledon Road, Holloway, London.

**Lenses, etc.**—Rapid rectilinear lens, 8 by 5, must be of first-class value.—Roberts, Glyn Rhondda, Porth, Glam.

Wray's R.R. half-plate, Iris.—Howard, 16, Perryn Road, Acton.

Rapid rectilinear lens, 12 by 10, also 12 by 10 wide-angle, by wood maker.—Address, Biddle, 97, Medlock Street, Manchester.

**Sundries.**—Camera case, canvas, to hold half-plate (Biccliffe), three double slides, lens, etc., shoulder strap, in exchange for 50 good lantern slides.—Bilson, Holmfirth.

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Strong, yet portable.  
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**BEST**  
AND  
**CHEAPEST.**

SOLE MANUFACTURERS:  
**FRED. J. PROUTING, Tilehurst, Berks.**

## "A FOOL IS A MAN WHO IS WISE TOO LATE."

THE PHOTOGRAPHIC SEASON is approaching, and the time will come when Winter will ask, What have you been doing all Summer?

There are scores of amateurs who have practised photography for one, two, three, and four years and more, who could not show a dozen properly-finished pictures to-day. They may have scores of beautiful negatives boxed up; often enough they are business men who have not much time for printing, and when a few prints do get finished the best of them are usually given away. A few perhaps get "stuck up" in frames or in an album—often enough the album contains inferior prints—"just as a record, you know!" But perhaps they can show a lot of Lantern Slides; well, that's all right; but our friends can't admire Lantern Slides all the year round. Now, by turning attention to STEREO SCOPIC WORK the whole thing is changed, TRANSPARENCIES ARE THE THINGS. They are easier to make than Lantern Slides. The Stereoscope lends itself to picture-making. A dozen Stereo-Transparencies may easily be made in one evening—and the work has all the fascinations of Developing—they can be mounted the next night, they keep clean, they are permanent, they don't get given away, as do paper prints; they are drawing-room accessories which our wives, or our mothers, or sisters, or sweethearts will take care of, they are the most perfect transcripts of nature photography is capable of rendering; they are always in season, winter or summer, daytime or night, in company or alone. Send for a Catalogue and read "The Stereoscopic Manual," post free, 1s. 2d.

**W. I. CHADWICK,**  
2, ST. MARY'S STREET,  
MANCHESTER.



# The AMATEUR PHOTOGRAPHER

Telephone N<sup>o</sup> 1645

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FRIDAY, MARCH 20, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

**OUR VIEWS.**—The Liverpool Exhibition—Our Visit to Manchester—We Visit Leicester—Society at Ashton-under-Lyne—A Club for Old Etonians—Lantern Exhibition at Creed Lane—The AMATEUR PHOTOGRAPHER'S Annual—The Federation of Societies—Colour-Sensitive Plates; a Caution—A Photographic Club at Grahamstown—The AMATEUR PHOTOGRAPHER on the Continent—Photography at the Royal Met. Society—A Stereoscopic Club.

**LEADER.**—Pictures at Liverpool.

**ILLUSTRATIONS.**—"Seven Ages of Man" Competition.

**LETTERS.**—A Plea for Young Amateurs (A. C. C.)—Postal Photographic Club (Metcalfe)—Liverpool Exhibition; A Protest (Exhibitor)—Hand-Camera with Swing-Back (Evershed)—"Floreat Etona" (Gambier Bolton)—Vienna Exhibition (Sma)—Construction of Lenses (Lewis).

**COMMUNICATED ARTICLES.**—Construction and Uses of Lenses (Leaper)—Studies in Art for Photographers (Lambert)—Instantaneous Photography (Harrison)—Photographic References (Nott)—Photography as Applied to Astronomy (Mauder).

**EXHIBITIONS.**—Liverpool (No. II).—The late Chas. Keene's Drawings—Royal Society of Painter-Etchers.

**NOTES.**—Liverpool.

**APPARATUS.**—Lancaster's "Omniograph" Hand-Camera—The "Rover" Hand-Camera (Illustrated)—Sharp and Hitchmough's "Aptus" Enlarging and Reducing Camera (Illustrated).

**SOCIETIES' MEETINGS.**—Aldenhall Institution—Ashton-under-Lyne—Bradford—Brentwood—Cardiff—Croydon Camera—Falkirk—Glasgow and West of Scotland—Haltwhistle—Hackney—Holborn—Ireland—Kendal—Leeds Y.M.C.A.—Leicester—Liverpool—Liverpool Camera Club—Louth—North Kent—North Middlesex—Oxford University—Photographic Society—Putney—Richmond—Sheffield Optical—Shoreditch—Stockton—Toynbee—Tunbridge Wells—West London—West Surrey.

THE Liverpool Exhibition is drawing large houses, and should be seen by all who can spare the time; no remarks in these columns can sufficiently point out the advantages to be derived by visiting such an exhibition. We had the pleasure of paying an official visit last week, when we showed the 1890 AMATEUR PHOTOGRAPHER Prize Lantern Slides to a most appreciative audience. We were much gratified by a request from the Executive that they should be shown again the next evening, Mr. Wm. Tomkinson, a member of the Council, acting as showman. In another column we give a few words upon some of the prize pictures.

LAST week we also had the pleasure of accepting the invitation of the Council of the Manchester Amateur Photographic Society, and had the opportunity of showing the Prize Slides, in the Athenaeum Hall, to an audience of some 700 people, members of the Society and their friends. Our reception was most enthusiastic, and we most heartily

thank the members of the largest amateur society, except the Camera Club, for their kindness. The President, Mr. Davenport, referred to the fact that the AMATEUR PHOTOGRAPHER had, in the early days of the Society, encouraged them in every way. The Society has many AMATEUR PHOTOGRAPHER medallists amongst its ranks. It is what may be called a "well-found" society, runs a capital monthly journal under the editorship of Mr. Wheeler, has a first-class triennial lantern, single lantern, enlarging camera, etc., etc., all for the use of members. The number of elections on the evening when we were present quite alarmed us, no less than thirty-four new members being elected, a society in themselves. We understand that by far the larger number of members are active, and that they take an immense interest in photography. It may possibly be interesting to mention that the first copy of the "Amateur Photographer's Annual" was presented to the Society upon the occasion of our visit. After such a reception as Manchester gave us, photographically and socially, the members of the Society will not be surprised if we pay them another visit at an early date.

On the return journey to London we stayed the night at Leicester, and spent an hour at the Temperance Hall, where Mr. Pierpoint, Vice-President of the Leicester and Leicestershire Photographic Society, was giving an exhibition of lantern slides, assisted by a first-class choir and orchestra. The audience, numbering some 1,800 people, seemed delighted with the pictures projected on the screen. We were much pleased to have the opportunity, kindly accorded us by Mr. Pierpoint, of addressing so large an assembly, and saying a few words of encouragement to the very many present who were interested in photography. Another object of our visit to Leicester was to inspect the extensive optical works of Messrs. Taylor, Taylor, and Hobson, and to which we shall refer next week.

THE Ashton-under-Lyne Photographic Society has been successfully started, with Dr. A. Hamilton as President, Messrs. J. W. Kenworthy, C. E. Redfern, Major Bradley, and Rev. H. J. Palmer as Vice-Presidents. Mr. G. H. Dean, of Crawford Terrace, will be glad to hear from intending members. We believe some sixty gentlemen have been enrolled.

THE letter from Mr. Gambier Bolton, headed "Floreat Etona," will, we should think, find much support, and no doubt a good society will be formed without difficulty.



It will be noted that the Duke of Newcastle, a very ardent amateur photographer, is kindly according to the scheme his help and influence. There are many subscribers who will support the movement.

WE would remind our readers that there will be an exhibition of lantern slides at our offices, 1, Creed Lane, on Monday evening next, commencing at 6.30. Subject, Animals and Instantaneous."

Our publishers tell us that a very large proportion of the first edition of the "Amateur Photographer's Annual" was bought up before the day of publication on Monday last. It is, of course, gratifying to us to find that our "Annual" has "caught on."

WE note that an adjourned meeting of the promoters of the scheme for the federation of the London and suburban photographic societies will be held on Monday, the 23rd inst., at 8 p.m., in the rooms of the Photographic Society of Great Britain, by permission of the Council. The following is the agenda:—

1. That it is desirable to form an association or federation of societies and clubs whose members are interested in photography.

2. That the London and suburban societies be requested to send two delegates to make the necessary arrangements, to settle the name and draw up the constitution of the proposed association, and to fix the terms of membership, etc., the delegates to have power to appoint a committee for this purpose, such delegates to continue to act for a period not exceeding six months from the launching of the association.

3. That the delegates take into consideration the following objects first:—(a) The interchange of lectures, papers, lantern slides, etc.; (b) The obtaining the reduction of railway fares to photographers on their outings, either singly or in parties; (c) The admission of the various societies joining the federation as corporate members of the Photographic Society of Great Britain; (d) Generally to promote photographic knowledge and research.

4. That the delegates be requested to prepare a list of honorary lecturers, who, when disengaged will, without charge or fee, lecture, read papers, give demonstrations and lantern evenings before other societies, and to make rules in connection with expenses, and otherwise.

MESSRS. B. J. EDWARDS AND CO., of Hackney, have called our attention to the paragraph in Mr. Andrew Pringle's article in last week's issue, in which he gives a formula for making plates colour sensitive by the use of erythrosin in conjunction with ammonia. This we find to be protected under the patent held by Messrs. B. J. Edwards for the preparation of isochromatic plates. It is therefore necessary for us to warn our readers that they cannot use this formula without the written consent of Messrs. Edwards and Co.

THIS week's mail brings us news from Grahamstown, South Africa, that an amateur photographic club has been successfully launched, with Dr. Duncan Greenlees as President, and Miss Blaine, of Woodville, Grahamstown, acting as Treasurer and Secretary. The inaugural meeting was quite a success, and we hope some of our colonial brothers and sisters in photography will enter the AMATEUR PHOTOGRAPHER competitions.

A GENTLEMAN, writing from Genoa, says:—"I need hardly tell you how eagerly I hail the arrival of the AMATEUR PHOTOGRAPHER every Saturday, with all its good advice and exhaustive articles."

At the meeting of the members of the Royal Meteorological Society held on Wednesday evening, Mr. A. W. Clayden, M.A., F.R.Met.S., exhibited a series of lantern slides illustrating meteorological phenomena.

WE are pleased to notice the formation of a Stereoscopic Club. The Society held their first meeting last week at Brooklands, near Sale, under the presidency of Mr. W. J. Cunliffe. Mr. I. W. Chadwick, of Manchester, has consented to act as Hon. Secretary. At the meeting, after some discussion, it was determined to adopt  $6\frac{1}{2}$  by  $3\frac{1}{4}$  as the standard size for transparencies; also that the dual pictures should be printed at  $2\frac{3}{4}$  centres measuring the foreground—the "distance" not always being the same—and that when matts are used the openings are to be  $2\frac{1}{2}$  inches wide and  $2\frac{3}{8}$  centres.

We are highly gratified to find that stereoscopic photography is again pushing to the front, and we hope that Mr. Chadwick will not rest satisfied until he has succeeded in giving stereoscopic effect to pictures projected on the screen by the optical lantern.

### PICTURES AT LIVERPOOL.

AT no exhibition has it been possible to see and examine the photographs exhibited, so well as in the Walker Art Gallery. The only difficulty we have to contend with when so many are meritorious is to pick out a few for special notice.

In portraits, Class I., we admire the work of Ralph W. Robinson; he has a charming method in his treatment of children. Messrs. Window and Grove show good work in "Miss Ellen Terry in 'Ravenswood.'" Baron de Brentano has some original work, especially in No. 38. Barraud's "Miss Macintyre" and "Mrs. Kendal" are really studies, but the dry paint enlargements by T. H. Flather are the most beautiful work in the class, the dry point or needle finishing has given such a roundness to the features and limbs as to give the appearance of copies of some of Sir Joshua Reynolds' charming portrait studies. The gradation is perfect, and not a vestige of mechanical treatment obtrudes upon the print. Mr. H. McMichael shows some startling photographic studies, especially his portrait of—as King Lear, Act III., scene 2, "The Storm." We unhesitatingly say that the best true portraiture is to be found in the frame of four pictures exhibited by A. Vandyke, two of which are most striking, viz., the portraits of Mr. Thomas Mayne and Mr. W. M. Tomkinson; no doubt the other two may be equally good, but we have not the pleasure of the acquaintance of either sitter.

In Class II., W. W. Winter exhibits some pretty cabinet photographs, and E. J. Browne some studies of heads, but the class is exceptionally weak. In Class III., W. J. Byrne has tried his hand at some fancy portrait studies, "Water Nymph," "Fisherman's Daughter," etc.—very stagey and very unnatural must be our verdict. In Class IV., still portraits, he is much better, and well deserves a medal for the four life-sized heads, untouched, the best being the portrait of Dr. Selle.

Landscape, Class V. There are some admirable pictures in this class, but we cannot say much for those exhibited by F. M. Sutcliffe; in our opinion, his work has greatly deteriorated during the last twelve months or so; why, we do not know; the author of "Water Rats" ought never to have gone back. The views in Iceland by Dr. J. Reynolds, made familiar to many of our readers through his article in the *Photographic Quarterly*, are many of them admirable. "Downton Mill," by G. Bankart, is a good picture—the best of the four shown by him. Ernest Spencer is a careful worker, and shows care in selection. E. Lloyd Edwards



has a bronze medal awarded him for his four pictures, "A Pool on the Dee," "My Cottage in the Wood" (the best), "Bala Road to Lake Vyrnwy," and "On the Canal, Llangollen." This worker has been pushing steadily on, he is most painstaking, and we are delighted to find his pictures receiving recognition at the hands of so critical a bench of judges. Our American cousin, J. G. Bullock, shows good work, and an especially bold picture in "Currents of the Restless Main." R. W. Robinson has beautiful colour and effect in "On the Hither Side of the Night." Alexander Hamilton's Alpine views are very fair; the best is certainly "The Gorner Glacier, Zermatt." Mr. F. D'Arcis earns his medal; "Twilight" is a most perfect picture, and shows clearly that this competitor takes no hackneyed view of the beauties of nature. E. S. Gladstone shows a fine effect in his "Sunset, Capenoch." David Lewis, who we seem to remember as a medal taker in 1888, has some choice pictures, of which the best is "A Normandy Cottage." The views of Aysgarth, especially the one of the Church, by the Rev. F. W. Stow, shows much discretion in selecting point of view. "Lincoln," by Cyril S. Cobb, is a good picture. William Bedford shows four lovely pictures, which we are surprised the judges should have overlooked, all are perfect, but the best is "Down Dale." The hoar frost studies by E. A. Gollidge are flat, and will not compare with the excellent pictures of hoar frost exhibited by S. G. B. Wollaston; 232 is, to our mind, the best, the picture is in such perfect balance, and the subject treated with exquisite care; the next best is 233. E. M. Tunstall has a rather good picture in "Cattle at Bidston," only there is too much foreground.

In Class VI. Mrs. Hignett has a charming picture, "St. Ives." S. Bourne sends four very choice and well-selected pastoral pictures rather after Gale; the best is "Wayside Gossip." We have seen better work of E. B. Wain's. H. Lupton's is of good average quality, and "Teesdale, near Barnard Castle," is a photograph with considerable merit. Arnold J. Cleaver has an admirable view of "Durham Cathedral," which though much photographed makes a charming picture. Wm. Tomkinson deserves his medal; we like "Peel Castle, Isle of Man," best, but 271, "Rocha's Hotel, Glengariff," is a clever picture. We were pleased to see a frame of photographs by T. Mansell, who has just been awarded the AMATEUR PHOTOGRAPHER medal for one of the pictures exhibited, "Winter's Morning, Bidston."

Class VII.—No photograph in this class calls for special comment.

In Class VIII. T. Zacharias takes a medal for four landscapes of average merit. A. H. Hignett shows some good views on Loch Achray, well chosen and composed. A. W. Gottlieb has some pretty pictures taken in and near Bournemouth. Martin J. Harding sends four of his delightful little studies printed in "Celerotype"; he has secured a good tone and a surface almost like ivory. J. Lamond Howie's work is as usual *petite* and perfect. We liked very much the two views of Ulleswater by F. K. Glazebrook, also the Bettws-y-Coed views by J. L. Mackrell. W. Tomkinson in this class shows "Cloud Scenes, Killarney," which are exquisite.

Class IX. (introducing important figure subjects, which are made to tell a story, etc.)—Of course this class is not a success. There are a few, a very few, decently good pictures which to some extent "tell a story." Fred Anyon's "Is Life Worth Living?" is certainly clever, and the boy model has done his best. His face tells the story. "The Bird's Nest," Mrs. Hignett, is another good study. "Romeo and Juliet," by the Countess Loredana, is too stagey. In the near future these "tell the story" pictures will be conspicuous by their absence; at least we hope so.

"Marine and Cloud Studies." Class X.—Thos. Glazebrook has exhibited some perfectly lovely studies, and has been awarded a bronze medal. A. W. Gottlieb's studies in this class are also very good. S. Bourne, who takes the silver medal, has two of the most perfect pictures in the exhibition, "In the Evening there is Light," and "The Sinking Sun, Killarney." Arthur F. Stanistreet shows good work, and F. D'Arcis "On the Esk," "Low Tide," "Whitby Harbour," and "Off to the Fishing Ground," should be noted by all visitors to the exhibition. A. R. Dresser sends some photographs to this and other classes printed on Fry's naturalistic paper. Is Mr. Dresser going to wear the cast-off cloak of the past champion of "Naturalistic Photography," who has retired in favour of the Do-as-you-please school of photography? Louis Meldon exhibits excellent photographs of the racing yachts *Thistle*, *Iverna*, *Valkyrie*, and *Irex*. H. Dudley Arnott's "Fishing Port" series are very good. A. S. Watson's "The Twilight is Sad and Cloudy," on rough paper, is very well chosen, and the rough surface helps the subject. "Boat Studies," J. L. Mackrell, show careful work and selection.

Here we must leave the Exhibition for this week, contenting ourselves by advising all to go and see the photographs for themselves.

## Reviews.

*Jahrbuch für Photographie und Reproduktionstechnik für das Jahr, 1891.* Edited by Dr. J. M. Eder, published by Wilhelm Knapp, Wien. Price, 8s.

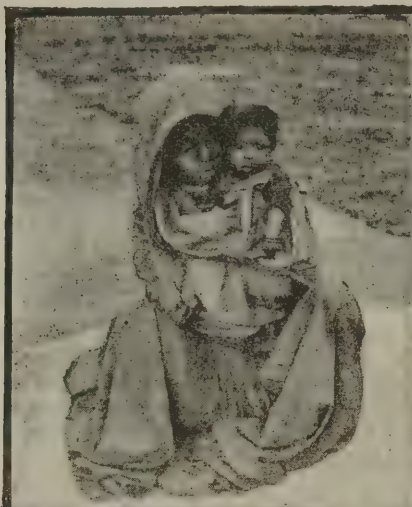
Those who can read German and have ever seen a copy of this year-book, will look with some considerable amount of pleasurable excitement for the present volume, and a rare treat is here in the reading matter. We need not mention such well known names as Eder, Vogel, Pizzighelli, Hübl, Himly, Albert, Angerer, Obarnetter, and Husnik, with a host of others, to be certain of getting something worth reading. Of English contributors there are but four, viz., Bothamley, Chapman Jones, Wall, and Waterhouse, though we find many of note from the English magazines and many a formula by an English worker. We find 320 pages crammed with valuable information in the shape of original communications, and a summary, by the Editor, of the advances made in photography, which takes up another 280 pages. The illustrations are, we think, a little inferior in quality this year compared to last, but even in this respect they are far above anything yet given in the English year-books or almanacs; there are twenty-three in all, and include seven collotypes, two photogravures, and fourteen blocks by the latest improvements in process work. Of the original communications it would be invidious to state the most interesting, but undoubtedly one of the most striking is that by Dr. Zenker, of Berlin, "Die Entstehung der Farben in Photochromie" (The origin of the colours in photochromy), in which the principle of interference as utilized by Lippmann in the formation of the coloured spectral images he has obtained, is clearly explained, and of which we give our readers a précis. We find here also articles on "Chromotypy," by Angerer; "A Normal Method of Development," by Bothamley; "On the Later Advances in Heliochromie," by Eugene von Gothard; "Photography of the Retinal Images of an Insect's Eye," by Dr. Eder; on micro-photography, flash-light work, detective cameras, lenses, shutters, orthochromatic plates, astronomical photography, etc.; and the information given is of the very latest, and certainly in most cases from the pens of past masters in our science and art. The summary, by the Editor, we need hardly state, is of the most complete and exhaustive character, and embraces every branch of practical work.

**Impure Potass Sulphocyanide.**—Mr. J. Hendrick, of King's College, writing to the *Chemical News*, draws attention to the fact that several samples of this salt which he purchased contained chlorine and less sulphur than it should do, and suggests the desirability of testing samples on purchasing. He says the pure salt contains 32.95 per cent. of sulphur, while in one sample he tested there was only 10.1 per cent.



## "SEVEN AGES OF MAN" COMPETITION.

(1)



(2)



(3)



(4)



(5)



(6)



(7)

By A. C. EVANS, ALIJARH, INDIA.



## "The Seven Ages of Man" Competition.

We must own that in this competition we were sadly disappointed. We feel sure that many might have gone in for the "Seven Ages" and turned out pictures. We reproduce the pictures sent us by Mr. A. C. Evans, of Aljhar, India.

It is, we should say, quite certain that although the well-known lines from Shakespeare's "As You Like It" have formed the theme for many a picture, never in the memory of man have they been illustrated with natives of India as models.

Our readers may judge of Mr. Evans' success by reference to the whole-page illustration which we give, and it remains only for us to describe each picture.

No. 1.—"At first the infant, mewling and puking in the nurse's arm." (The infant, aged three months, was taken in her mother's arms; she happened to be passing the camp.)

No. 2.—"And then the whining schoolboy, with his satchel and shining morning face, creeping like snail unwillingly to school." (Is the ordinary Government school in any village of importance.)

No. 3.—"And then the lover, sighing like furnace, with a woeful ballad made to his mistress' eyebrow." (The lover scene was taken on the steps of the railway station; the party were about to proceed by train when I was passing with my camera.)

No. 4.—"Then a soldier, full of strange oaths and bearded like the pard, jealous in honour, sudden and quick in quarrel, seeking the bubble reputation even in the cannon's mouth." (Government sepoy in the service of the Canal Department; one is off guard and the other on duty; both to attention, drawn by the appearance of a stranger in camp.)

No. 5.—"And then the justice, in fair round belly with good capon lined, with eyes severe, and beard of formal cut, full of wise saws and modern instances; and so he plays his part." (The Canal Deputy Magistrate, in charge of a district, and holds the position of a junior civilian of the statutory class.)

No. 6.—"The sixth age shifts into the lean and slipper'd pantaloon, with spectacles on nose and pouch on side; his youthful hose, well sav'd, a world too wide for his shrunk shank, and his big manly voice, turning a gain toward childish treble, pipes and whistles in his sound.

No. 7.—"Last scene of all, that ends this strange, eventful history, in second childishness and mere oblivion, sans teeth, sans eyes, sans taste, sans everything."

Mr. Evans further tells us that he had only one week from the time he read the advertisement to the time for completing the prints. The subjects are all actually from life, in the costumes and surroundings of everyday life in India. The original photographs may be seen any Monday afternoon.

## Letters to the Editor.

### A PLEA FOR YOUNG AMATEURS.

SIR,—I am a member of a photographic society, and find the question is often asked, why do so many fail, and so few succeed? I think one reason is that a new starter is sometimes subjected to the sneers and jeers of older members of the society which he has had the courage to join. He submits his work with fear and trembling. I should advise him to seek out the good fellows, for I am pleased to say there are many who are willing to render the assistance required, and who remember at the same time their own start.

On the other hand, I ask the clever ones to come down to our level, take us by the hand and show us the way, for we are groping in the dark; our purse is low, our opportunities are small, and time limited. Ten minutes of their time will save us hours of anxiety and trouble, besides expense, and at the same time save many of us from stranding with the usual advertisement, "camera for sale," for I find, if only persevered with, photography becomes a pleasure in proportion as it is understood.

I should advise joining the AMATEUR PHOTOGRAPHER Competition. I have sent a print, and, although not successful, the criticism was splendid, true, and honest. It lends an interest in what is going on, besides keeping one up to the mark. Photograph with a purpose, do not copy, be original; the sneering ones you need not fear, for they do not succeed beyond a certain point; let opposition and discouragements act as stepping stones to success. Let a society be for all members; give always a fair field and no favour.—Yours truly,

A. C. C.

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### POSTAL PHOTOGRAPHIC CLUB.

SIR,—It has occurred to me that Mr. Baird may feel inclined to start a postal portfolio club in Ireland, and that he and others might be glad of a few hints in drawing up rules, etc. It is just four years since you kindly inserted a letter for me in the AMATEUR PHOTOGRAPHER, by which I got twelve amateurs to join me in starting the Postal Photographic Comparing Club, and it has flourished without hitch or hindrance from that time to the present. We have considerably increased our number of members, and have never found any difficulty in filling up vacancies, which proves, I am happy to say, that the Club is fully appreciated. I enclose a copy of our rules, which, if you please, you can give in full, or an epitome, as you think best.—Faithfully yours,

T. T. S. METCALFE.

Cotswold, Cirencester,  
March 14th, 1891.

### RULES.

1. That the name of this Society shall be "The Postal Photographic Comparing Club."
2. That the Society shall consist of at least twelve members, with power to add to their number.
3. That the portfolio be forwarded monthly by each member to the next on the list by parcels post.
4. That no member detain the portfolio more than three days, exclusive of Sundays.
5. That each member send to the Hon. Sec. before the 27th of each month, at least one whole-plate, two half-plate, or four quarter-plate prints. Members failing to send the required prints, must send, instead, a fine of 6d. for each omission. Any member neglecting to send any prints for three successive months renders himself liable to be struck off the members' list.
6. That the subscription of one shilling a year from each member, and all fines, shall form a fund to pay for cases, hospital albums, printing, or any other club expense.
7. That the Society's year begins May 1st, but each member's year of membership dates from the time of joining, and members are requested to forward their subscriptions, when due, to the Hon. Sec.
8. That each print be mounted on cardboard, to ensure safety from injury, but no mount must exceed 12 in. by 10 in. in size (very heavy thick mounts are not recommended, as increasing weight of portfolio considerably). Members to write their names, together with name of subject and full particulars, on the back.
9. That the Hon. Secretary shall (if possible) obtain the services of a good critic, to criticise the prints before they go round to the members.
10. That members be invited to freely criticise prints circulating, to point out defects, and suggest remedies.
11. That the owner of the print gaining the most votes each month shall receive, as a prize, the two prints that he most likes in that portfolio.
12. That the prints, after they have circulated, may be made into albums by the Hon. Secretary, and sent to hospitals for the amusement of the patients. Any member particularly wishing to have a print returned to him must state this at the time of sending it in, and enclose stamps for its postage.

\* \* \* \*

### THE LIVERPOOL EXHIBITION—A PROTEST.

SIR,—Allow me a small space to state that I consider a grave injustice has been done to the exhibitors in Classes 7 and 9 by the withholding of the medals.

Of course, it is understood that the jurors have power to act thus under two conditions, as stated in Clause 8 of the prospectus, viz., either too small a number of contributors, or insufficient merit in the pictures. Let us see how these points apply to Classes 7 and 9.

(1) As to numbers. An examination of the catalogue will



show that, taking the average of eleven classes, Nos. 3, 4, 12, 18, 20, 21, 23, 24, 25, 26, and 27, with a total of 99 contributors, they average only nine competitors all round (and in four of them only three to six competitors).

In Class 7 they number 13 (with 52 pictures), and in Class 9 they number 21.

We must therefore dismiss the idea that numbers show a deficiency, although in Class 9, as only one picture is permitted, the total of contributors will naturally appear small, but in all fairness ought not to be taken into account.

It will thus be seen that in eleven classes, averaging only nine contributors, all the awards have been disposed of, but in the two Classes 7 and 9, averaging almost exactly double the number of competitors, the medals are withheld. The objection as to numbers cannot possibly stand.

(2) On the score of merit. Of course, the opinions of the jurors must be final. Not having seen the exhibition, I have no opinion to offer, and being a contributor to Class 9 only (of these two), the only remark I have to make is that my own picture having already taken a silver medal (at a society local competition)—on which occasion it elicited very high praise from the judge, a gentleman of well-known standing in photography—would appear to belie the opinion that no picture of sufficient merit existed in this class. I do not mean to assert that no better pictures are in the class, but I think it is a fair deduction from this fact that the judges have, from some cause or other, given undue preference to other classes, and too little consideration to Class 9, and that it is treating the twenty-one contributors to Class 9 with scant courtesy to pass the class over without making any award at all.

No doubt the duties of the jurors were very onerous in dealing with such a mass of contributions, but on behalf of myself and the remaining thirty-three competitors in Classes 7 and 9, I trust they will not object to reconsider their determination and to re-examine these classes with a view to awards being made.

I note also that in Class 9, although "only one picture" is allowed, two competitors appear (by the catalogue) to have two each hung. Vide Nos. 381 and 383, and Nos. 382 and 387.

For obvious reasons I desire to preserve an incognito, and sign myself—yours, etc.,

AN EXHIBITOR.

\* \* \* \*

#### HAND-CAMERA WITH SWING-BACK.

SIR,—With reference to the paragraph in "Our Views" of March 6th, referring to a hand-camera with swing-front, will you allow me to inform your correspondent, and all those who are interested in hand-camera work, that a camera with swing and rising front and capable of being used with lenses of various foci, was provisionally protected by Mr. B. W. Wild and the writer of this letter at the end of last year, and which we hope to have on the market when perfected. So that the demand of your querist has been already anticipated.—I am, dear sir, yours, etc.,

March 14th, 1891. A. R. F. EVERSHED.

\* \* \* \*

#### "FLOREAT ETONA."

SIR,—His Grace the Duke of Newcastle, who is an enthusiastic worker in our art-science, is anxious to see if it would not be possible to start a photographic society or club in connection with the school at Eton, and for this purpose invites old Etonians to write to him or to me here, and any hints or suggestions will be received with pleasure. It is proposed to call a meeting of old Etonians shortly, when some definite plan will be laid before them. A society like this might be the means of doing incalculable good, and I see no reason why it should not be made entirely self-supporting after the first twelve months.

GAMBIER BOLTON.

Camera Club, Charing Cross Road, W.C., March 16th, 1891.

\* \* \* \*

#### VIENNA EXHIBITION.

SIR,—The editorial in your issue of the 27th ult. compels me to reply again. I must request you not to lose sight of the essential difference between our this year's exhibition and preceding exhibitions. In our opinion there cannot be in force at a photographic art exhibition other principles than at other art exhibitions. I explained at length, in a former letter, why we deem it unsuitable to require of our exhibitors the express declaration that the work is their own production. It affords us lively satisfaction to see that men such as Mr. Maskell and Mr. Davison have come forward for our views. Your remarks in

a preceding number cannot by any means move us to alter our interpretation, and still less the text of our circular of invitation to foreign exhibitors. But to put an end to the matter, I, as President, can assure you that at this year's exhibition the members of our club will consider it a matter of honour, as well as of preference, to have done throughout the work sent in.—I am, sir, yours truly,

Vienna, March 7th.

C. SERNA  
(President).

\* \* \* \*

#### CONSTRUCTION OF LENSES.

SIR,—I am reading with much interest the valuable articles on the above subject by Mr. Clement J. Leaper.

The subject is not an easy one to treat in a way that all can readily understand, and the introduction of diagrams naturally affords great help. The illustration on page 129 helps the reader to comprehend "astigmatism," and the assistance afforded by diagrams would be materially increased if the lettering were a little more distinct. These letters easily go astray, and I think the *f* which appears on and between the line *d* and *p* has somehow got on the line just below where it ought to be. On page 130, first column and third line from the bottom, we read, "and again reflected towards *g p*." Now as there is no *p* in the diagram, this circumstance will prove a puzzle to those who are not up in this branch of study.

I trust, therefore, I may be excused for pointing these little matters out, although I am well aware how easy it is for mistakes to occur, yet if a little more attention can be bestowed on these diagrams, it will enhance the already great value of the papers.

I would also express the hope that when lenses are illustrated, the shading indicating the juxtaposition of the different kinds of glass will be so different from each other that anyone will be able to discriminate at once by the look of the shading, which is for flint and which for crown glass.

The shading of the lens diagrams in "Wall's Dictionary" are an example of what I refer to, as they might, without difficulty have differed more widely than they do.—I am, yours etc.,

Brighton, March 16th, 1891.

C. HETHTON LEWIS.



**A New Photographic Relief Process.**—M. Favraud gives the following process for obtaining reliefs from negatives, in the *Journal de l'Industrie Photographique*:—Wash a planished sheet of copper with acetic acid and then with distilled water. Then dry it and coat with the following:—

Tannin ... ..	4 grammes.
Gallic acid ... ..	2 "
Water ... ..	500 c.cm.
Drain, and dry the plate and coat with the following mixture:—	
Distilled water ... ..	1,000 c.cm.
Gelatine ... ..	100 grammes.
Alcohol ... ..	50 "
Bichromate of potash ... ..	10 "
" ammoniac ... ..	10 "
White of egg ... ..	10 c.cm.
Pure glycerine ... ..	10 drops.

When dry, the plate is exposed under a negative, and is then treated with a saturated solution of sulphate of iron, by means of which a strong relief, which is moulded in the following amalgam:—

Bismuth ... ..	4 grammes.
Lead ... ..	32 "
Tin ... ..	32 "
Antimony ... ..	8 "
Copper ... ..	4 "
Mercury ... ..	1 "

Oxygen, as is well known, used to be prepared, and still is, on a small scale by heating a mixture of chlorate of potash, black oxide of manganese and salt. Then Messrs. A. and L. Brin improved on Boussingault baryta process, and their process is now much used, and it is practically treating baryta or oxide of barium in a partial vacuum and forcing into the retort air under great pressure, when the baryta absorbs oxygen from the air, and on the further application of heat, again gives up the absorbed oxygen in a state of great purity, the baryta being ready for further work in the same way. Kastner has now proposed the following plan:—A mixture of plumbate of lime and an alkaline carbonate are heated, when a mutual decomposition occurs, and carbonate of lime and peroxide of lead are formed, and at a higher temperature the peroxide is decomposed into protoxide of lead and oxygen gas. The mixture of protoxide of lead and carbonate of lime is again converted into plumbate of lime by passing a current of air through it, the once charging of the retort being quite sufficient for almost indefinite quantities of oxygen.



# The Construction and Use of Photographic Lenses.

BY CLEMENT J. LEAPER, F.C.S.,

Instructor in Photography, City of Dublin Technical Schools.

## CHAPTER IV.

### TYPICAL PHOTOGRAPHIC LENSES.

*The Simple Lens.*—The first lens employed in photography was a crown plano-convex with its plane surface facing the view. The diaphragm, usually about one-thirtieth the focal length of the lens itself, was placed in actual contact with it, and under these conditions the extent of surface sharply covered equalled about one-fifth the focal length of the lens.

About two years after the introduction of the daguerreotype, a converging meniscus was substituted for the plano-convex lens hitherto employed, the diaphragm being placed in front of the lens at a distance equal to one-fifth the focal length of the latter. Under those conditions the surface covered was increased to one-fourth the focal length of the lens. The concave surface was in this case turned towards the view.

In using such lenses the want of sharpness due to chromatic aberration was allowed for by altering the position of the ground glass after focussing, as increasing the depth of definition sufficiently by stopping down to make the focus for the yellow coincide with that of the blue was out of the question, owing to the want of sensitiveness in the materials then employed.



FIG. 6.

With the very rapid plates now in use, it is possible, however, by the use of a very small stop, to increase the depth of definition of non-achromatic lenses sufficiently to permit of their employment, provided the focus of the lens is sufficiently long. Thus a biconvex spectacle lens of 24 inches focus, used with a stop  $\frac{1}{4}$  inch in diameter, will cover a half-plate with a fair degree of sharpness, and the exposure necessary will not be inordinate, although the lens is actually working at  $f/96$ , and if a quartz lens of similar form is used it will be found that a much larger stop will suffice. The best position of the stop in this case can be found by trial, and varies from  $\frac{1}{4}$  to  $\frac{1}{5}$  the focal length of the lens. Owing to their slowness, however, such lenses are seldom or never employed now-a-days, the correction for spherical and chromatic aberration being effected without reducing the working aperture of the lens to a greater extent than one tenth of its focal length.

*The Single Lens.*—A fairly good type of this lens is shown in fig. 6.\* It consists of a biconvex crown cemented to a biconcave flint, and can be constructed from the following data:—

$$\frac{1}{F} = \frac{1}{f} + \frac{1}{f'}$$

$$\frac{f}{f'} = \Delta$$

$$\frac{1}{f} = (k'j - 1) \left( \frac{1}{R} - \frac{1}{R'} \right)$$

$$\frac{1}{f'} = (kj - 1) \left( \frac{1}{R'} - \frac{1}{R''} \right)$$

in which

$F$  = focal length of combination.

$f$  = focal length of flint lens.

$f'$  = " " " crown lens.

$k$  = index of refraction of flint glass.

$k'$  = " " " " crown glass.

$\Delta$  = ratio between dispersive powers of flint and crown.

$R$  = outer radius of curvature of flint-glass lens.

$R'$  = radii of curvature of cemented surfaces.

$R''$  = inner radius of curvature of crown-glass lens.

The outer radius of curvature of the flint-glass lens ( $R$ ) is chosen arbitrarily in the first instance, and if the combination is found to possess a chemical focus in front of its visual one, the centre of this face is ground down so as to shorten the focus; if, on the other hand, the chemical focus is behind the visual focus, the edges are ground down so as to lengthen it.

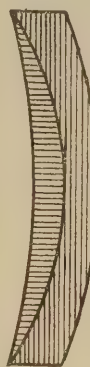


FIG. 7.

The position of the diaphragm, depending as it does upon the radius of curvature of the outer flint lens, is arrived at by trial; the nearer it is to the lens the greater the curvature of the field and the less the distortion, and *vice versa*. When stopped down to  $f/30$  the extent of surface sharply covered equals  $f/2$ .

Another and better type of lens is shown in fig. 7, which in this case consists of a converging crown meniscus cemented to a diverging flint meniscus, the relative positions of the flint and crown being thus reversed. In this case the radius of the crown lens having been suitably chosen, one side of the flint lens is made of the same radius, that of the other side being worked so as to yield an achromatic combination according to the principles laid down in the case of the former type of lens.

If the radii of curvature of the crown-glass lens are suitably chosen, spherical aberration will be much smaller than in the former case, meaning, of course, a gain in rapidity.

A third type of single lens recently patented by Messrs. Schröder and Stuart is shown in Fig. 8. In this case the concave and convex surfaces form two nearly concentric spheres, the lens being composed of a plano-convex of high refractive and low dispersive power, cemented to a planoconcave of lower refractive power but of similar or higher dispersive power than that of the convex lens, this latter being pointed towards the object to be reproduced. Taking the refractive index of the glass of the front lens as 1.61, and that of the back lens from 1.50 to 1.53, the following tables enable such a lens to be constructed:

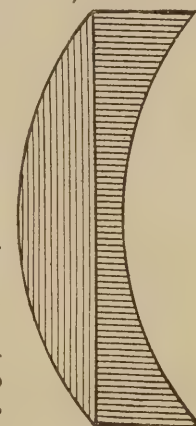


FIG. 8.

Index of Refraction of Plano-Convex Lens.	Ratio of Dispersive Powers of Two Glasses.	Index of Refraction of Plano-Concave Lens.	Ratio of Curvature.
1.61	..	1.53	.. 1.094
1.61	..	1.52	.. 1.109
1.61	..	1.51	.. 1.123
1.61	..	1.50	.. 1.138

These lenses give a considerable amount of distortion, but in the next type of lens (fig. 9) this is reduced to an almost negligible amount when the angle included is not too great. In this case the lens consists of two converging crown menisci, with a diverging flint meniscus between them, the three lenses being cemented together.

The following are the data of construction of this lens expressed as ratios of the focal length of the combination—

\* In this and in all subsequent diagrams the side of the lens facing the view is towards the left.



Focal length of combination	..	..	10,000
Diameter of combination	..	..	2,302

## Indices of refraction—

Flint	..	..	..	1,581
Front crown	..	..	..	1,521
Back	..	..	..	1,514

## Radii of curvature—

Flint	..	..	..	{ + 4,813
				{ - 1,727
Front crown	..	..	..	{ + 1,727
				{ - 6,043
Back crown	..	..	..	{ + 2,561
				{ - 4,813

## Ratio between focal lengths—

$$\frac{\text{Front crown}}{\text{Flint}} = .706 \quad \frac{\text{Back crown}}{\text{Flint}} = .645.$$

Distance of stop from lens, 1,151.

This lens includes an angle of 92 deg. with a small stop, and is quite free from flare spot. When made to embrace such a wide angle, the marginal lines are somewhat distorted, but this distortion is inappreciable when the angle covered does not exceed 50 deg.

Dallmeyer sends out, under the name of the "wide-angle landscape lens," a series of ten lenses of this type, numbering from 1A to 8, having foci of from 5 to 25 in., and capable of covering from a 5 by 4 to a 25 by 21 in. plate.

In all the foregoing lenses distortion occurs at the margins of the plate. For a long time this was believed to be incurable in single lenses, but quite recently Dallmeyer has patented his "rectilinear landscape lens," in which it is completely absent.

As will be seen by reference to fig. 10, this consists of a diverging flint meniscus cemented to a converging crown meniscus, this combination being placed a very short distance in front of a converging crown meniscus turned in the opposite way.

As sent out by Dallmeyer, this lens includes seven numbers, having foci of from 8½ to 32 in., and covering from 4¾ by 6½ to 22 by 20 in.

The following are the data employed in constructing this lens—

		Radii of Curvature, in Inches.	Indices of Refraction.	
			D	G
Cemented meniscus of flint and crown	Flint	+ 2.900	1.574	1.593
		- 1.558		
	Crown	+ 1.558	1.515	1.527
		- 3.342		
Simple meniscus of crown		- 6.001	1.517	1.528
		+ 3.489		

(To be continued.)



**Light and Company, Limited.**—This postal club, which has been started for some time, is now in the hands of Mr. Wallace G. Thomson, of Laurel Bank, Halifax. He will be pleased to receive the names of two or three ladies or gentlemen to make up the full complement of members.

## Studies in Art for Photographers.

By REV. F. C. LAMBERT, M.A.

### CHAPTER V.

It will be profitable to the student to return for a moment, and concentrate his thoughts upon a law or principle which was referred to (though briefly) in Chapter IV., viz., the Law of Principality, or Subordination. It cannot be too often urged that the true student of art is also the constant student of nature, and although, perhaps, one may justly hesitate to declare for the dictum, "that all art is founded upon, and found in, nature," yet the art treasures of all peoples and times go to show that nature and art are practically inseparable. In fact, one may say that nature can be compared to a piece of tapestry having a front and a back, and that art represents the front, which, while not ignoring the existence of the knots and thread ends at the back, yet at the same time is content to look only upon the front, and let the unseen knots and thread ends sink out of mind, as they are—for the most part—out of sight. Turning to nature, it is very easy to see that a large number of natural objects are what naturalists term bilaterally symmetrical, or in other words, that it would be possible to cut these objects into two very nearly equal and similar parts. Most animals have two eyes, two ears, etc., limbs in pairs or in corresponding rows, etc., on each side of the body.

Bilateral symmetry, again, is easily seen in many leaves, in a large number of flowers, and to some extent in the branches of trees. All this goes to show that the principle we first set before ourselves in this course of study, and which we termed balance of lines, etc., has its counterpart in nature. In fact, we may, with almost equal propriety, use the terms balance or symmetry, observing, however, that when using the latter we apply it with some elasticity, seeing that *strict or mathematically accurate* symmetry is by no means universal in nature; and, moreover, it is far from agreeable in art work, other than that of a purely decorative or utilitarian purpose.

Symmetry when carried to excess is apt to give rise to monotony and poverty of design, with a corresponding lack of interest.

Now the careful observer will hardly fail to notice that with this bilateral symmetry in natural objects there is nearly always a central and chief part about which the symmetrical parts are grouped—some central or leading and chief line of growth, or axis about which and in subordination to which all other parts are disposed. Take, for instance, almost any leaf—the first that comes to hand is an ivy leaf—observe the five unequal lobes of the leaf, consisting of two smaller, two larger, and one odd central part. Note also the central mid-rib, stronger and more prominent than the other two pairs, which are given off right and left to the two pairs of symmetrical lobes. Note, too, the symmetry of the venation in each lobe, and also the graduated subordination of the secondary veins in each lobe. Examine other leaves, flowers, branches, and note the great principle of symmetry or balance, about a central axis or chief part. Now the lesson which nature here teaches has been learnt (unconsciously, perhaps) by most, if not all, great workers in art, viz., that with the symmetry there is *beauty in variation*, and that among the symmetrical or balancing parts there is not equality but a *graduation of relative importance*, and finally that there is some *one* part which takes command of all other parts.

Some irrepressible wag has left behind him the story that in the American army there is no one below the rank of "kernel." It is extremely likely that this "great unknown"



tried picture-making on his ideal army lines. But every one knows well enough that the drummer-boy is as essential as the general in command, each in his place; and every picture-maker knows that the same principle applies—"where all command none obey," says the old saw. Where all parts of a picture clamour for attention no one part retains it, is equally true. The law of principality, with its corresponding idea, viz., subordination of parts, applies to all works in which order and design play any part.

It may be easily seen to be a most important element in many musical compositions, in poems, novels, and the drama generally.

When applied to pictorial art its effects are both far-reaching and fundamental. In the first place, we may very properly apply the principle to the leading *lines*, so arranging them that there shall be some one line which leads the eye, easily, almost unconsciously, up to the chief point of interest. This, in a limited sense, may be regarded as the axis of the system, and the balance or symmetry is referred to this as the one chief feature requiring support from both sides. Again, with regard to the different planes in the picture, it is abundantly manifest that the eye does not see with equal distinctness at the same moment objects situated in planes widely separated from each other; hence some one or more planes not separated from each other by any great distance should be regarded as the chief area of interest. Again, with respect to the disposal of the masses of light and shade. The distressing effect of anything like a patchy arrangement has been already noticed; hence it follows that the best and most restful effects are obtained when there is some one (or perhaps two) masses of light and shade which are the dominant light and shade in the picture, to which all others become subordinate, either by being intermediate in brightness, or by reason of their size, their relative interest, or unattractive position. This desirable result is generally secured in the most effective manner by so arranging matters that the chief light and dark, if not in close proximity, are at least not separated by any great distance or important object. By this means *contrast* is secured; but something may be said of that in a subsequent paper.

Last but not least the law of principality applies in full force to the relative importance of the subjects selected for inclusion in the picture. It is clear that if we place ourselves midway between two pianos, upon which the two performers are playing different and inharmonious pieces, no matter how beautiful each composition may be yet the two together produce not joy but distraction. Now although it may be urged that the eye does not see two different things at once, yet, while there is some truth in this, it must not be forgotten that the rapidity with which the eye adjusts itself for distinct vision in passing from point to point is often practically equivalent to seeing two things at the same time, because the impressions conveyed to the brain through the eye are to a great extent accumulative.

Hence where several equally interesting objects are presented to our eyes, we pass so rapidly from one to the other that the impression is a collective one, but the fact of its being a collective impression of several equally interesting objects eliminates to a great extent the individuality of any part or element. The total impression is vague and general, rather than precise or incisive. Hence for good results we must take care that our objects of interest shall not be too many in number (thereby subdividing the total amount of available attention) nor too similar in character (lest they pass into the region of monotony), nor all of equal interest, lest they fight for the chief place, and, like the Kilkenny cats, find their victory in mutual destruction.

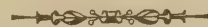
What is more tame, insipid, and generally unsatisfactory than the ordinary "group" photograph wherein all are of equal significance (or insignificance)? The temptation to overcrowd out-door scenes with all sorts of objects of interest (and otherwise) into the foreground, the middle and extreme distance seems to be the great temptation of the ordinary "landscapist."

The typical photograph consists of, say, a foreground group, pic-nic party (including the hamper, the dog, and the baby). In order that he may get plenty into his picture, the operator selects a foreground with "objects of interest" in it, as, for instance, some large tree of historic repute. On a large white board in black letters is set forth the number of people who have been hanged, drawn, and quartered in this cheerful place. This entertaining legend is sharply focussed with the greatest care—equalled only by that bestowed upon the wicker-work of the pic-nic hamper, and the dog's tail. Now, by moving a yard or two to the left the operator finds he can include the village and also the church spire in the middle distance, and by going a little further he also is enabled to crown his masterpiece by including a line of cliff, with the harbour and shipping in the extreme distance. The final touch of genius is given by printing in a sky which is in itself quite a study of storm cloud.

This is by no means an exaggerated case, but rather a very average and typical one, all going to show the need of a few guiding principles. If one may judge by the almost universal fault of overcrowding, it would be safe to say that the law of principality or subordination is the use to which the majority of photographers need learn to pay more attention.

At any rate—to sum up—one may say that it is a very useful idea to carry in one's head for general reference, seeing that it applies to all the parts and phases of pictorial structure. It may be applied (1) to the leading lines and groups of lines, (2) to the disposal of the more important masses of light and shade, (3) to the various planes of the picture, i.e., the area of chief interest, (4) to the various component parts which are calculated to claim the spectator's attention, and (5) to the various poetic aspects of the theme selected; but of this matter more can be said after the individual methods of treating the theme by the great masters have received some attention.

(To be continued.)



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XIII.

#### PRACTICAL EMULSION MAKING.

PLATES of the best qualities, for general work, are best made by the simple boiling process. But high sensitiveness is most readily obtained by the use of ammonia; and as it is sensitiveness which is our principal—though not our only—requirement in a plate to be used for instantaneous work, we shall describe the practical work of making an emulsion by that method. We have had the good fortune to be "personally conducted" over several of the great plate-making factories now at work in England, and in the course of these articles we shall use the knowledge so obtained to point out what may fairly be required of a plate; together with the principal defects, and their causes.

The actual work of making the sensitive emulsion may be divided into five operations.

(1) Soak 40 grains of Nelson's No. 1 gelatine in eight



ounces of distilled water. Add to this 180 grains of ammonium bromide and 10 grains of potassium iodide. Dissolve the whole by gentle heat, and stir well. The use of the iodide is to give clearness to the plates; it also enables density to be obtained more readily.

(2) Dissolve 100 grains of silver nitrate in one ounce of water. To this solution add strong ammonia until the brown precipitate first formed is just re-dissolved.

(3) From this point all the operations must be conducted in the dark-room, by ruby or orange light. Raise the temperature of Solution No. 1. to 170 deg. F., and add to it, by degrees, 165 grains of silver nitrate, shaking and stirring well. When this has all dissolved, add Solution No. II., and shake well. Then allow the whole to stew for two hours; keeping the heat at 170 deg. F.

After two hours, allow the emulsion to cool to 80 deg. F., and add to it 300 grains of Heinrich's (hard) gelatine. Increase the heat to 100 deg. F., when the whole should dissolve, and stir well. Then set the vessel containing the emulsion in cold water, when the contents will quickly "set" to a stiff jelly.

(4) The emulsion must now be *washed*. This may be effected by squeezing the jelly-like mass through coarse canvas in water; and changing the water repeatedly.

(5) Lastly, add one ounce of alcohol to the washed emulsion; and dissolve it by gentle heat (110 deg. F.). Make up with water to ten ounces, if necessary; and filter by squeezing through swansdown calico.

#### COATING THE PLATES.

In making an emulsion, as described above, there is little difficulty: it is in the subsequent operations of coating the plates, and then drying them (and more especially in the latter), that the need of practice and of special appliances is felt.

The quantity of emulsion we have given (ten ounces) ought to suffice for coating half a gross of quarter-plates.

The filtered warm emulsion is placed in a very small teapot, and is poured upon the clean warm glass plates, over which it is made to spread by a dexterous movement of the hand. The coated plates are then placed to "set" on a levelled slab of glass or slate.

In five minutes the plates will be ready to be transferred to the "drying-box"—a dark box or cupboard, provided with shelves or racks to receive the plates, and through which a current of air is made to circulate. The plates should dry in about sixteen hours, and they must then be packed film to film—with a piece of pure white tissue paper between—and put into the boxes in which they are to be kept.

*Plate-making on a Large Scale.*—The dry-plates made annually somewhere or other on this planet are believed to now amount in value to the immense sum of three millions sterling. On entering a dry-plate factory, we see first the rooms in which the glass is received. The maker usually prefers to coat the glass in a large size, and then to cut it up into smaller sizes as wanted. Thus quarter-plates are seldom or never coated in that size; they are made by cutting up coated whole-plates.

Of the emulsion of gelatino-bromide of silver, about twenty gallons are made at one time. The plates are, for the most part, coated by machinery. They pass on an endless band under a vessel filled with emulsion, which runs out through a long slit. They then pass through a tunnel eight or ten feet long, which is cooled by ice; so that the emulsion "sets" very quickly.

*Drying* is effected in rooms fitted with racks, and supplied with a current of pure warm air. The plates are then cut to size, examined, and packed.

*Isochromatic Plates.*—Ordinary dry-plates have little sensitiveness to yellow, orange, or red light. But by mixing a little erythrosine dye with the emulsion, plates which are as sensitive to yellow as to blue light can be obtained; and these are styled isochromatic or orthochromatic plates. Good results can be obtained on such plates in the yellow light of evening, or in the murky atmosphere of some large towns, when instantaneous work on ordinary plates would be all but impossible.

*Making and Coating Celluloid Films.*—The horny substance called celluloid was discovered by Alex. Parkes, a well-known Birmingham chemist, about the year 1856. But its successful introduction as a "support" for the sensitive salts used in photography did not occur until 1888; and its introduction for this purpose was largely due to Mr. John Carbutt, of Philadelphia, who persuaded the celluloid manufacturers of the United States to experiment until they succeeded in producing a transparent form of the material. This celluloid is made by dissolving "soluble cotton" with a mixture of camphor, methyl-alcohol, fusel oil, and amyl acetate. It is spread out in a liquid form and dried upon sheets of plate-glass. The Eastman Company has just built a large factory at Harrow, near London, for the production of a thin or "rollable" form of celluloid (only the three-hundred-and-fiftieth part of an inch in thickness) for use in their roll-holder. The ordinary or "thick" celluloid is about the hundredth part of an inch thick. Celluloid is coated with emulsion in a similar way to glass plates.

It has only been possible here to give an outline of the method by which our dry-plates and films are produced. Those who intend to practice plate-making for themselves are referred for details to Professor Burton's capital little book, "Modern Photography"—and to Captain Abney's "Photography with Emulsions."

(To be continued.)

## Photographic References.

By MAJOR J. FORTUNÉ NOTT.

(Continued from page 169.)

### DEVELOPMENT.

WHEN everything is ready for the dark-room operations in connection with this branch of the subject which is now under consideration, it must be borne in mind, before proceeding to mix the developer, that chemicals cannot possibly supplement the action which the light effects upon the plate, but they can undoubtedly be used so that the operator is able to gain some control over the gradation and density of his negatives. The light action after the exposure has once been made is an unalterable factor in development, never mind what chemicals may be employed, and it therefore becomes necessary to find out or test in some manner the degree in which the light has acted on the plate, so that some knowledge regarding its requirements can be obtained. Under some conditions its action may not have been sufficient to give all the detail required, owing to the exposure having been of too limited a duration. In another case the exposure may have been too prolonged, with the consequence that if submitted to the action of an ordinary developer, the image would flash out suddenly, and then veil all over with "light fog." Or, if the over-exposure were not in so great a degree that this action was set up, it might be sufficient to cause the developer to act too quickly or energetically for the photographer to be able to exert any



control over its action, which possibly might cause him to lose his negative. It is not possible for anyone to be certain on all occasions that his exposures have been properly timed. This fact being indisputable, it therefore necessitates careful work in the dark-room, for, to some extent, and with experience to a great extent, errors in exposure can, as before stated, be so dodged that the creation of fairly good negatives can be made from plates which have suffered in this way if the nature of the error is discovered in time.

The beginner must not form any erroneous opinions from listening to the assertions which are now being made, that the photographer has no control in development over the gradation of the negative, his power being limited to securing the degree of density which is deemed requisite. Proper development has long been regarded as an art in itself, and one requiring great care and attention. The above assertion is refuted by this fact, and it is not in accord with the practical experience of photographers who have given careful attention to the subject. Theories formed from experimenting under certain given circumstances must not be taken as guides when they are in opposition to practical experience, the result of a lifetime's work under all the variety of conditions which must have existed during the period. The differences which would be seen in two negatives made from plates exposed under identically the same circumstances, but developed by different people, one with little or no experience, and the other by one well versed in the art, would demonstrate the possibilities which exist in the developing room when the photographer has the knowledge required to fully appreciate the power he possesses.

If developing a plate were merely a mechanical routine, then there could be no latitude whatever in the exposure, for it would have to be correctly timed to suit the exact power which the developer exerts. Now it is an accepted fact among photographers of experience that although there is such a thing as absolutely correct exposure, nevertheless there also exists, as already stated, a certain latitude for which provision can be made in the developing room, so that an almost faultless negative can be created from plates that have had a considerably longer exposure than was technically correct. And again, in the event of the exposure having fallen somewhat short of the period which could be pronounced as correct, it is also possible to force out the detail that is sluggish in making its appearance. While these facts exist and cannot be refuted, it is surely incorrect to say that the control possessed by the operator over an exposed plate lies entirely in the degree of density which the negative can be given.

Repeating the statement already made, it is obvious that chemicals cannot in any way supplement the action of the light; but once the light has exerted that mysterious influence over the plate which enables the developer to act, common sense suggests and practical experience confirms the opinion that some one of the various forms of developers will be suitable for the work when the duration of the exposure is duly considered. Or by merely varying the quantities of their constituents the way in which they act can be so completely changed that different results ensue, and a certain amount of control can be exercised in this way. In other words, a developer can be mixed that will only act within a reasonable time upon a plate that for another form of developer would be so much over-exposed that only a fogged plate would almost instantly result from its use. It also follows that in the case of a supposed under-exposure, this may only happen when a certain standard of developer is taken into account; it does not therefore necessarily follow that for one having a more energetic action there would exist any under-exposure.

If the light has not acted on the plate to a certain extent, no chemicals can be made to do their necessary work in the manner required, but if the light has once been admitted to the plate with any degree of intensity, then it is almost certain that there does exist some form of developer which will enable the operator to bring out the latent image. Practical knowledge, therefore, is required in the developing room, as it is everywhere else, before skilled work can be accomplished. The means whereby apparent difficulties can be overcome is always worth knowing, and the beginner is strongly advised to make when it is possible some experiments with the various forms of developers which are now in use by photographers, also to note the results ensuing from changing the proportions of the ingredients in their composition. A few experiments of this sort will be far more satisfactory than any amount of second-hand information or the adoption of plausible theories. It is not absolutely necessary for a young photographer to take up the study of chemistry in order to acquire proficiency in the art of development, nevertheless it is advisable for him to acquire some information regarding the nature of a few simple chemicals to whose use he will have to resort. It is distinctly necessary, however, for him to learn as soon as possible the functions these chemicals fulfil, and the reasons that their addition to the developer is required, and in connection with this subject he should take note of the proportionate quantities, in relation one to the other, which are necessary for them to act conjointly with what may be called the unity of vigour.

The chemical side of photography is the one that supplies apparently more hopeless obstacles for the tyro to overcome than any other of its manifold phases. But in reality there should be no difficulty for any one possessed of the average amount of intelligence and a desire to acquire all the information necessary for his work with the camera, for with a very short application of his faculties to the subject he will find in all probability that his difficulties have disappeared and that this special feature of the photographic art is in reality its most fascinating side. The class of men who send their plates to be developed and printed by some one in the business lose the greatest pleasure which photography can confer. The mere focussing a picture and subsequent exposure of the plate cannot possibly excite the same intellectual pleasure that the process of development, the forcing of its hidden secrets from the surface of the plate, can be made to yield when the work is recognised as one calling for the use of brains and skill, or at any rate is not considered to be a purely mechanical operation with its hit or miss style of procedure.

To the subject of the chemicals required and their use in the developer we purpose making some reference in the ensuing article.



## The Lantern Society.

### PHOTOGRAPHY AS APPLIED TO ASTRONOMY.

At the meeting held on March 9th, Mr. E. W. Maunder commenced by dealing with solar photography, the sun having, he said, been the first celestial object which was photographed for scientific purposes. Soon after the discovery of the daguerreotype process, photographs were taken of the moon and also of some stellar groups, but these views did not serve any scientific purpose, and it is from the systematic use of the photo-heliograph for obtaining a photographic record of the state of the solar surface that the application of photography to astronomical purposes may be said to date. Mr. Maunder next spoke of the first photo-heliograph erected at Kew, and described in detail the later instrument now used at Greenwich, the work done by the



instrument being illustrated by a series of slides showing portions of the solar surface. Other views were also exhibited prepared from the beautiful photographs taken by M. Janssen at Meudon, these being, as Mr. Maunder remarked, the finest solar photographs yet produced, showing as they do most admirably the structure of the surface of the sun, the faculae, etc. While dealing with solar photography, Mr. Maunder also pointed out the strong grounds for connecting the period of maximum solar disturbance, as marked by the frequency and extent of sun-spots, with terrestrial magnetic disturbances, and he further alluded to the manner in which the periods of maxima and minima were marked by variations in the latitude of the spots occurring.

The next portion of the subject treated was the application of photography to the observation of total solar eclipses, the instruments used being described, and a number of photographs shown illustrating the structure of the corona as seen at recent eclipses.

Leaving the sun, Mr. Maunder next proceeded to treat of the photographing of the planets, illustrating his remarks by slides of Jupiter and Saturn taken at the Lick Observatory, and by Professor Pickering, of Harvard. The task of photographing a planet was, he remarked, one of great difficulty, inasmuch as the very moderate light available did not admit of instantaneous exposures, such as sufficed in the case of the sun, while the rapid rotations of Jupiter and Saturn on their axes prevented recourse being had to the long exposures which could be employed when photographing fixed stars. Altogether, up to the present time, although remarkable progress has been made, photographs of the planets left much to be desired, and could not compare favourably with the records obtained by skilful draughtsmen. In illustration of this there were thrown upon the screen reproductions of a number of the best drawings of the planets of which direct photographs had been shown.

Dealing next with stellar photography and photographs of nebulae, Mr. Maunder remarked that in these departments photography left all records founded on visual observations far behind. In fact, the details of structure of nebulae, as shown by the magnificent photographs of Common and Roberts, had been a complete revelation, and had resulted in an extension of our knowledge of such bodies, the value of which it was difficult to over-estimate. For comparison there were shown on the screen photographs of the Orion Nebula and the great Nebula of Andromeda, and reproductions of the best drawings available prior to the production of these photographs.

In dealing with stellar photography, Mr. Maunder paid a well-merited tribute to Dr. Gill, of the Royal Observatory at Cape-town, whose photographic survey of the southern hemisphere, carried out largely at his own cost, and now practically completed, may be fairly said to have originated the scheme for the general photographic survey of the heavens determined upon by the International Congress, and the arrangements for which are now in an advanced stage. In treating of these matters Mr. Maunder spoke at length on the admirable work done by Messrs. Paul and Prosper Henry, of the Paris Observatory, his remarks being illustrated by a large number of lantern slides showing the instruments used, photographs of the Pleiades, a portion of the constellation Cygnus, etc.

In conclusion, Mr. Maunder dealt with the applications of photography to solar and stellar spectroscopy research, there being exhibited on the screen the wonderful photographs obtained by Mr. Higgs from the red end of the spectrum, and examples of the spectra obtained by Professor Pickering from stars, the duplicity of which had been revealed by the spectroscope, the spectra obtained on some days showing the duplication of the lines due to movements of the stars in the direction of the line of sight. This duplication of the lines showed that the spectrum in which it occurred was compounded of the light from two stars moving at different velocities with regard to the line of sight, and by collating the observations at different dates it was possible to calculate the periods of revolution and the masses of two stars which had never been separated visually by any telescope yet made, and probably never would be.

At the next meeting of the Lantern Society, on March 23rd, the slides sent to England by the American Lantern Slide Interchange will be exhibited.



**Quarterly Examinations.**—Mr. Clement J. Leaper writes:—"I must again congratulate you on your capital plan of giving your question-box competitors some *practical* work to do, in order to test their abilities."

## Exhibitions.

### LIVERPOOL INTERNATIONAL PHOTOGRAPHIES.

No. II.

(By Our Special Correspondent.)

By the time this issue of the AMATEUR PHOTOGRAPHER sees the light, somewhere about 10,000 people will have passed through the turnstiles of the Liverpool Exhibition. This is putting the attendance at a medium figure, which in all probability will be exceeded. Such unequivocal success was scarcely anticipated by even the most sanguine of those interested in the scheme, and has certainly far surpassed the calculations of the more sober and pessimistic. The photographic Press as a whole, and the local Press generally, have materially assisted to this grand result, the journalistic notices of the show having been uniformly flattering.

#### LIME-LIGHT DEMONSTRATIONS.

So far as the attendances at the nightly lime-light demonstrations and lectures are concerned, they also have been highly satisfactory; notwithstanding that two demonstrations, each lasting from one and a quarter to one and three-quarters of an hour, are given every night, the audiences average from 500 to 300. Perhaps the most novel and popular of these "side shows" has been Mr. Paul Lange's "Iceland," which, given for the first time in public last Friday, elicited from a large, fashionable, and critical audience many volleys of rapturous applause. When it is said that immediately the lecturer concluded Mr. Lange was swamped in a crowd of congratulatory fellow photographers, the quality and effect of the demonstration will be better understood. In a series of nearly 120 really first-class slides, those depicting experiences in the fording of rivers, the sulphur springs at Krisuvick, the geysers, cloud effects, the crater of Hecla, the "midnight sun," the "Golden" Waterfall, interior of an Icelandic homestead, the Almanagja, and a hurricane off the Faroe Islands may be singled out for special mention. The examples of the natural colourisation of the island, from the purple black of the lava to the rich blue of boiling cauldrons and the brilliant yellow of the sunshine, were a revelation, attesting the skill of the operator in every detail. Among the other lecturers who have delighted their hearers during the past week are Mr. John Hargreaves, "The Hundred of Wirral;" Mr. Geo. Thompson, "Florence, Past and Present" (a new demonstration of great value); Mr. Fred Clibborn, "Italian Highways and Byeways;" Mr. C. W. Hastings, "Prize Sets in AMATEUR PHOTOGRAPHER Competitions;" Mr. J. W. Wade, "Hand-Camera Work;" Mr. Thomas Brownrigg, "Foreign and Home Scenery and Antiquities;" Mr. W. Lamond Howie, "To Ober-Ammergau and Back in 1890;" Mr. A. F. Stanistreet, "The White Mountains of New Hampshire;" Mr. Robert Bailly Wilson, "Picturesque New Zealand;" Mr. Paul Lange, "Norway" and "Picturesque Scotland." To-night (Friday) the lecturers are Mr. A. R. Dresser, "Uses of Hand-Camera Slides;" Mr. Christopher Naylor, "A Tour Round the World;" and on Saturday Mr. Paul Lange's "Iceland" and Mr. Fred Clibborn's "Up and Down North Holland."

#### MORE OF THE PICTURES.

Undoubtedly, the exhibition grows on one with successive visits; and this is so both in regard to the large number of good pictures and the all-round excellence of the show. You may walk carefully round the galleries a dozen times and always find something new. Let us take the classes consecutively, beginning at Class I., portraits 10 by 8 in. and over; any process; set of four pictures. The numbers range from 1 to 72, the collection representing the work of eighteen amateurs and professional firms. Nos. 1 to 4 (Marius and Vivash) are good, as are 5 to 8 by Mr. Geo. Latimer, a member of the Walton Society. Mr. W. Crooke's 13 to 16, especially No. 13 "Well by his Visage," are very excellent, and were awarded the silver medal, which, however, had to be withdrawn, as the picture had been previously exhibited. Next, 25 to 28 (R. W. Robinson), portraits of children, are exceptionally fine and nearly secured the award. In fact, Mr. Robinson was unlucky not to get it. Barraud's show very good studies in 45 to 48, as does Mr. W. Barry in 49 to 52. Mr. T. H. Flather (53 to 56), has four clever pictures (dry point needle process), and Mr. H. McMichael is prominent with a unique set, 61 to 64; pose and general effect very fine, especially in No. 64. Mr. Harold Baker's (bronze medal) 65 to 68 are capital, and Vandyke's (silver



medal) 69 to 72 unusually good. In 72 (a) Mr. A. Von Mumm, of Washington, U. S. A., has a splendid study. Another well-liked exhibit is Window and Groves' No. 29, of 29 to 32. Mr. W. J. Byrne's 57 to 60 are also very creditable.

Class II.—portraits,  $8\frac{1}{2}$  in. by  $6\frac{1}{2}$  in. and under, any process; set of four pictures—is made up of some twenty frames (73 to 89), representing eleven workers. No. 75, cabinet photographs by Mr. W. W. Winter, should, in the opinion of many critics, have received a medal. Certainly they are very high class. Of Mr. W. J. Byrne's 82 to 85, 85 is decidedly the better picture.

In Class III.—portraits, platinotype or other matt-surface prints; set of four pictures—Messrs. Window and Grove get the bronze medal with No. 91, a very excellent frame. Nos. 95 to 98, Mr. W. J. Byrne, are favourites. Six exhibitors compete in this class; nine frames, 90 to 98.

Class IV.—portraits (bust or head only, direct only), direct, untouched, any size or process; set of four pictures—comprises 99 to 109, to which five workers contribute. Mr. W. J. Byrne takes the bronze medal with 106 to 109.

The combined portrait classes embrace Nos. 1 to 109, which represent the work of about thirty exhibitors: four foreign—Frederick Baron de Brentano, Hanover; Gaston Plessy, France; Premier Lieut. Bohmer, Gleiwitz, Germany; and George Alpers, jun., Hanover. On the whole, these foreign exhibits are very fair.

There are five landscape classes (V. to IX. inclusive), the numbers ranging from 110 to 401, and including the exhibits of about 120 competitors: fourteen foreign—Joseph Scholefield, Nurnberg, Germany; Hauser J. Menet, Madrid; Johann Pasquali von Campostellato, Austria; J. Martiny, Belgium; Premier Lieut. Bohmer, Germany; M. de Déchy, Odessa; Baron de Brentano, Hanover; Countess Loredana da Porto Bonin, Vicenza, Italy; Gaston Plessy, France; Thomas Zacharias, Germany; Breitinger-Wyder, Zurich, Switzerland; George Alpers, jun., Hanover; Manuel de Soto, Zurich; and Joseph Chmielewski, Poltana, Russia. There are also one or two exhibits from the United States and the colonies. Individual studies, and the work, as a whole, reaches a very high point of excellence indeed.

Class V.—landscapes, whole-plate and over, platinotype or other matt-surface prints; set of four pictures—is the most numerous section of the landscape classes, extending from Nos. 110 to 237. Over thirty workers are represented. Nos. 118 to 121, Scenes in Iceland, by Dr. John Reynolds, are novel, and evince much care and ability. No. 111 of F. M. Sutcliffe's 110 to 113 is distinctly the better picture, though the quartette are good. Then come 142 to 145 (bronze medal), by E. Lloyd Edwards, of which No. 143 is the best and more prominent; No. 150, in 150 to 153, by C. H. Miller; 154 to 157, R. W. Robinson; and 166 to 169, by Hauser J. Menet. The latter set have a pleasing green tone, and the detail is exceptionally good. A. Hendry shows up to advantage with 174 to 177, and F. D'Arces takes a bronze medal with 178 to 191, No. 179 being the finest. Nos. 186 to 189, by Ernest Gladstone, show a variation, Nos. 186 and 187 being far superior to the other two. James Pennington's 202 to 205, Cyril S. Cobb's 206 to 209, William Bedford's 210 to 213, T. M. Brownrigg's 218 to 221, and E. M. Tunstall's 226 to 229 are excellent, and a quartette of Hoar-Frost Scenes, S. G. Buchanan Wollaston's 230 to 233, uncommonly fine. M. de Déchy's 234 to 237 are fair. Mr. Wollaston's best picture is No. 233. Johann Pasquali von Campostellato contributes 222 to 225, a rather mixed four, of which 222 and 225 are the pick. Mr. Cobb would have increased his chances for a medal had he got a better colour in his set.

Passing Nos. 242 to 245, by Chas. A. Timmins, No. 242 being a very creditable picture—in Class VI. the first studies of note are No. 247, by Mrs. Janie W. Hignett, and then No. 249, Sidney Snelgrove, a set which would in all probability have taken an award only that the clouds are too heavy. S. Bourne's 251 of 251 to 254 is the better, and Henry Lupton has a pleasing four in No. 257—three scenes in Teesdale and one at Bettws-y-Coed. W. P. Shaw, No. 262, exhibits a nice set, as does Arnold J. Cleaver in 264 to 267. William Tomkinson (silver medal), 268 to 271, shows his two best pictures in "Sheep Washing" (269) and "Peel Castle" (270). Both these studies specially mentioned are first-class. M. de Déchy, in No. 275 of 272 to 275, shows an AMATEUR PHOTOGRAPHER medal picture. Class VI. ranges from 238 to 275, and is contributed to by twenty exhibitors. Conditions: Landscapes, 8 in. by 5 in. and under; platinotype or other matt-surface prints, set of four pictures.

Contributors to Class VII., Nos. 276 to 326, number thirteen. The competition is for landscapes, whole-plate and over, silver prints, including Obernetter and Aristotype, set of four pictures. In this class there are three foreign and one American competitors, including the now famous Countess Loredana da Porto Bonin, the Italian gold medal winner in the flash-light section. She is represented in Class VII. by 319 to 322 ("Love," "Reflection," "Repose," and "At the Wells"), four very fine works. John Kennedy exhibits 276 to 279, George Latimer 280 to 283, J. Milman Brown 287 to 290, of which Nos. 289 and 290 are the choice; J. H. Tarbell (U.S.A.) 300 to 302, and F. H. Glazebrook 307 to 310.

In Class VIII., Nos. 327 to 380—for landscapes, 8 in. by 5 in. and under, silver prints, including Obernetter and Aristotype, set of four pictures—there are thirty-nine competitors, several of whom hail from the colonies and abroad. Karl Greger's "Mountain Solitudes in the Tyrol" (329) is a lovely exhibit, the toning being remarkably fine. This competitor secures a silver medal for instantaneous work. No. 332, by Thomas Zacharias, gets the bronze medal, and then follow 333, by Jas. Alex. Forrest; 334, by A. H. Hignett; 353, by A. F. Stanistreet; 354, by J. Lamond Howie; 377, by J. L. Mackrell; and 379, by William Tomkinson. All these sets are admirable. In 343 T. B. Sutton shows very fair work, so does A. Bradbury in 368, and in 378 Walter Pollard has a set conspicuous for their general neatness.

Twenty-one exhibitors make up Class IX., the last of the Landscape Classes, 381 to 401, any size, any process, introducing important figure studies, which may be made to tell a story or illustrate a poem or poetic thought, one picture only; may be a combination print. No medal was awarded in this class. However, Fred Anyon is very much to the fore with No. 384, a capital study, "Is Life Worth Living?" Other good pictures are 382, Thomas Glazebrook; 383, Frank R. Sutcliffe; 386, Joseph Chmielewski; 389, Mrs. Janie D. Hignett; and 401, Countess Loredana da Porto Bonin.

#### THE STEREO TRANSPARENCIES.

Turning from the "print" exhibits until next week, and reviewing the stereoscopic transparencies and lantern slides, it may be at once stated that they are a superb collection. Commencing at Class XVII. they conclude at Class XXI., exclusive of several exquisite sets "not for competition." Altogether, the competitive display numbers within one or two of fifty sets, and represents the work of many masters in these delightful branches of photography.

In Class XVIII., 721 to 727, stereoscopic transparencies (set of six), H. J. Houghton carries the silver medal away with No. 726, each of the slides being a capital specimen. Arthur F. Stanistreet is equally deserving of a silver honour with 721, but apparently home studies are not quite so novel or so well appreciated as those made abroad. H. J. Houghton's set includes 1, 2, and 3, Chirk; 4, 5, and 6, Obersdorf, Bavaria. A. F. Stanistreet's half-dozen are local studies, a particularly brilliant one being the "Long Corridor, Eaton Hall." H. G. Ridgway, 722, has six beautiful scenes of Dovedale and other picturesque spots; and other exceedingly good work is shown by T. S. Mayne, 727; Alex. Hamilton, 723; and J. E. Ellam, 724.

#### SOME OF THE LANTERN SLIDES.

Class XIX., Nos. 721 to 727— $3\frac{1}{4}$  in. by  $3\frac{1}{4}$  in.; town or country life, landscape or general work; set of six—is composed of slides by some thirty workers. George E. Thompson takes the silver medal with set No. 745, really magnificent slides. Among this half-dozen, one slide in particular, "A Gipsy Camp," is marvelous, or, to quote the opinion of acknowledged judges, "the finest lantern slide we have ever seen." John Carpenter, 734, was awarded a special bronze medal for six charming flower studies, the gradations being shown in masterly style. Fred. Anyon is another bronze-medal winner with 751, a fine set. Other very excellent work is shown by Miss Rose Collier, 733; Edgar G. Lee, 728; Walter Ballard, 729; T. B. Sutton, 735; Chas. A. Timmins, 740; Chas. Reid, 736, a splendid set of animal groups; Alfred Tyrer, 743; James Dore, 752; E. M. Tunstall, 755; and Richard Crowe, 756. Mr. Carpenter's flower studies are taken on isochromatic plates. One of Mr. Pollard's slides, "The Setting Sun," Sanghall Massey, is especially to be commended.

Class XX. contains five sets, Mr. W. L. Howie being successful with No. 757, six magnificent specimens of architecture. The



other exhibitors are Geo. E. Thompson, 759; Richard Crowe, 760 (a); J. Davenport, 760; and Henry Sharrock, 738. Conditions:  $3\frac{1}{2}$  in. by  $3\frac{1}{2}$  in.; architecture, interior or exterior; set of six.

Class XXI. is important, though not so large as XIX. It embraces sea scenes, waves, and cloud studies. Messrs. Priestley and Sons, a local firm, are awarded the silver medal for No. 771 set, six splendid slides, including a grand wave study. A charming softness in the skies considerably enhances the value of this exhibit. Two bronze medal winners in the same class are J. W. Wade, 765, and Fred Anyon, 767. Both sets are of very high merit. John W. Swinden's set, 768, Walter Pollard's 761, and G. West and Son's 774 are also very good and artistic.

Among the "Not for Competition" sets, Paul Lange's 749 is very prominent, as also are several other contributions.

#### APPARATUS, ETC.

In my next article I propose, in addition to dealing with more of the pictures, to commence a review of the apparatus at the Exhibition. There are some of the latest and finest photographic instruments and many novelties to be touched upon.

#### MR. ALFRED PARSONS' "GARDENS AND ORCHARDS."

By "LOITERER."

"Men o' genius," said Schopenhauer, "stand to the rest of the world like a schoolmaster towards his charges." This being granted, one may express the idea that the artist should stand to the rest of the world, if not as a discoverer, at least as a revealer of that which the world often passes by. In this exhibition at the Fine Art Society's rooms, Mr. Alfred Parsons, R.I., depicts in the most congenial fashion quaint orchards and gardens about which "the aroma of the ages" hangs. This talented artist transports us, as in a game of "Post," from Holme Lacey to Bodenham, from Salisbury to Gravetye, and we seem to "feel the breath of the downs, soft blown o'er leagues of clover And cold grey stone." We see—

"A garden that boasts of some daffodils gold,  
A perfumed narcissus that's pale with the cold,  
A fair laurestina well laden with bloom,  
A hyacinth crimson escaped from its tomb."

Mr. Parsons is perhaps happiest in "The Kitchen Garden, Sutton Place" (9), which is the home of Mr. Frederic Harrison, the historian. His "White Lilies" (3) is graceful, and the contrast offered to the eye in "Some Peonies" (5) makes that picture very effective. The gorgeousness of the floral surroundings in "Shirley Poppies" (8) detracts a little from the otherwise excellent view. In "Daffodils and Plum Trees" (10), a pretty spot in Berkshire is depicted. What a daring purple hue one sees in "Grafting" (13)! But it is truthful, nevertheless. "The Light that Failed" (15) shows a lady attired in vivid crimson, reading (possibly, the very work by Rudyard Kipling which gives the title to the picture) in a shady retreat at Fladbury. We admire the care exhibited by Mr. Parsons in "Yuccas at Gravetye" (25). "A Charming Garden at Salisbury" (29), giving a peep at the Cathedral, will be universally praised. The colour of the grass is, perhaps, most true to nature as shown in "Lilies" (39). The detail and perspective in "A Terrace Wall, Shiplake Court," is wonderfully good. An oil-painting, "The Gay Garden" (45), almost fails by reason of its brilliance. The last picture on the walls, "Summer Flowers" (53), will give satisfaction. It shows a wild corner in "A Careless-ordered Garden" at Frome.

#### THE LATE CHAS. KEENE'S DRAWINGS.

By "LOITERER."

The exhibition at the Fine Art Society's rooms of the sketches by the late Charles Keene will probably prove to be the most popular of minor exhibitions. The sight of these drawings—most of which appeared in the pages of *Punch*—reminds one of the serious loss which British art sustained in the death of this great and genial artist. Perhaps his claim to fame will rest upon his presentment and momentary expressions in the features of faithful representatives of the middle class of society. It is interesting to recognise in "Sympathy" (15), 21, "A Foggy Day" (90), and "The Coming Exhibitions" (159) that the artist has been his own model. Mr. Keene was a genuine humourist; witness the sketch 60, which the following dialogue explains:—*Little Wife* (indignant; she had just let him in, 12.30 midnight): "I

can't understand why you gave me the slip to-day, you unmanly wretch!" *He*: "Sush 'a place, that Fish'riesh-Exsh'bish'l, my dear! Shimply couldn't find yer. Went 'Shiberia, 'n Shina—not there; Shpaine—not there; Life-boash; 'Freshmensh—(this seems to remind him)—Fish-deller ver' sheap—but makeshy' ulcom'ly shirshy!"

Mr. Keene was always happy in his "Scenes from Clerical Life." For examples of this see 11 and 56, where, to the question of the curate, "But, why do you object to having a hymn during the collection?" the rector replies, "Well, you see, I preach a good sermon, which I calculate should move the people to an average of half-a-crown each; but I find, during a long hymn, they seem to cool down, and it barely brings a shilling a head." In few cases did Mr. Keene's excursions into fashionable society reward his search for fit subjects for his pen. The "Philistine Visitor," in "Shocking" (18), is the best part of the sketch. Mr. Du Maurier would have made more of the lady addressing him. But when he depicted the "Tenants' Ball" (22) Mr. Keene was quite in his element. The conversation of which this picture is the subject was as follows:—*Mr. Algernon* (the young squire): "May I have the honour of a waltz with you, Mrs. M'Clusty?" *Mrs. M.* (of the Home Farm—a heavy weight): "Weth plee-sure, sir. Shall we 'op it or slide it, Mr. Ale-geron? I think we'd better slide—which is less fatiguing for the bulky!" A good specimen of the deceased artist's ability to sketch horses is to be seen in "Polo for the People" (32), while his caricatures of public men in "The Bicycle, 1879," are admirable. "Place aux Dames" (80) displays a most remarkable group of police-court personages, each of the faces being characteristic. Most people will be amused at "Thrift" (88), where a Highlander, who had struck his foot against a stone, exclaims, "Phewts! e-eh, what a ding ma puir buit wad a gotten if a'd had it on!" The delicate work in "A Foggy Day" (90) may surprise some who were not aware of Mr. Keene's varied ability. We conclude with one more selection out of 250 sketches, which are all amusing, which is as clever as it is natural. "The Honeymoon" (147) depicts *Wife* (after a little tiff): "But you love me, dear" (sniff) "still?" *Husband* (cross old thing): "Oh, lor', yes; the stiller the better!"

#### ROYAL SOCIETY OF PAINTER-ETCHERS.

As many exhibits as there are days in the year, and with as varied a character as the weather we usually experience on them, may be seen at the ninth Annual Exhibition of the Royal Society of Painter-Etchers, in its Gallery, 5A, Pall Mall East. The President's ideal of the work of the Society is realised to a greater extent than heretofore. This is "the re-infusion into all forms of engravers' work, of those personal qualities which, whatever the process employed, in the hands of the great masters of painting made engraving a fine art."

An interesting etching is "Cheyne Walk, Chelsea," by Mr. C. J. Watson (2), which would be an appropriate neighbour to Mr. W. W. Burgess's "Old Chelsea Houses—Carlyle's, Rossetti's, and 'George Eliot's'" (64). Mr. Fred Slocombe is excellent in "Byfield" (10) and in "Going Home" (45), where the winding road and trees make a capital landscape. All Mr. David Law's work deserves praise, especially his "Ludlow Castle" (16). Mr. Percy Robertson's "Winchester" (29) must not be forgotten. Of course, Mr. Herbert Dicksee is happy with his animal subjects. His study of a "A Drinking Lion" (112) would delight Sir Wilfrid Lawson, for, though the king of the forest is usually to be seen at bars, in this case his cooling draught is water. Mr. Dicksee sends also a careful etching of a tigress (171), depicted with an open mouth, which gives rise to a suggestion as to its suitability for the front of an automatic supply machine for match-boxes. The etcher who sends the most striking series of exhibits is Mr. William Strang, whose industry as well as versatility is shown by the eighteen specimens of his work. "Charon" (125) bears a resemblance to that old friend whose forelock we are instructed to take. "The Tower" (181) is rather woolly, but "The Schoolmaster" (92) deserves warm congratulation. Mr. Strang also excels in the delineation of gaunt despair in the "Castaways" (67). Mr. C. F. Allbon sends a pretty etching of "Tamise on the Scheldt" (38). Mr. G. P. Jacobm-Hood's "Head of a Woman" (40) shows all his usual skill, as also in the graceful frontispiece to Mr. Andrew Lang's "Aucassin and Nicolette" (248). Mr. A. W. Strutt was fortunate in his model for "The King's Pillow" (42). All Mr.



Axel H. Haig's work testifies to the care with which he has studied his art—witness "Arab Students, Cairo" (46), and "In the Arab Quarters, Cairo" (154). The view of St. Paul's which Mr. Francis S. Walker selected (48) was well chosen, and repays his painstaking study. Mr. Edward Slocombe is responsible for a good etching of "Maison des Bateliers, Ghent" (58), and is happy in "Old Elvet Bridge, Durham" (99). The Countess Feodora Gleichen sends an unpretentious etching "Music" (59). We like Mr. A. W. Bayes' "Borley Mill" (71). Mr. Charles Holroyd's "Death of Icarus" (76) is powerful. Mr. W. Boucher has been very lucky in "Old Folks at Home" (80), the models representing a veritable Darby and Joan, we should imagine. Mr. W. Holmes May sends an extremely good etching of a Welsh bridge (95) with an unpronounceable name. The soft texture attained by Mr. Percy Thomas in his "Fen Mill" (98) is worthy of a better subject. Mr. Charles H. Shannon has two fine specimens of his artistic skill in "Master Hargood" (101), and a mezzotint "Summer" (240). That was a happy selection which Mr. Herbert Marshall, R.W.S., made for his etching of brainland as "Fleet Street" (107) has been termed. Commendation must be awarded to Mr. W. Holmes May for "Through the Wood" (116); to Mr. R. Goff for his admirable "Sussex Downs" (121); and to Mr. C. F. Robinson for "The Fairy Glen" (143), which has been considered one of the prettiest etchings in the exhibition. All Mr. John Finnie's work shows his well-known style at its best; vide "A Lone Shore" (130), "Margin of Rydal" (172), and "Sunset" (237). Mr. T. C. Farrer has an excellent mezzotint entitled "The Return of the Flock" (168). Mr. Charles O. Murray is represented well by "Interior of Aldbury Vicarage" (189), where he has triumphed over the difficulties of light in admirable style. He shows care in "Pansies and Lilies of the Valley" (210). "The Marriage Door, Nuremberg" (251) is a fine piece of work by Mr. F. Inigo Thomas, who must have devoted much loving study to his subject. The plates of the *Liber Studiorum*, which were either executed by Turner himself or under his supervision, are also to be seen at this exhibition, having been generously lent by the Rev. Stopford A. Brooke, Mr. James Knowles, Mr. W. G. Rawlinson, Mr. F. Stevenson, and Mr. J. E. Taylor.

## Notes from the Liverpool Centre.

(By our District Editor.)

I THINK I have previously stated in this column that the ordinary monthly meeting of the Liverpool Association will not be held this month, owing to the advent of the exhibition. The series of practical demonstrations is also interrupted for the time being from the same cause, but the Wednesday coffee meetings—which, by the way, are an important feature of the Society—and other work are being conducted as usual.

In other societies connected with this centre, business is brisk. Meetings held during the month of March are:—

Bolton Camera Club—March 11th, "Chemistry of Photography," by Dr. Mackenzie; Members' Work, March 25th.

Blackburn and District Photographic Society—March 26th, Lantern Evening.

Bolton Photographic Society—March 5th, Opening of New Rooms.

Burnley Photographic Society—"Micro-Photography," March 25th.

Bury Photographic and Art Club—"Enlarging by the Lantern," Mr. R. Grundy, March 18th.

Crewe Amateur Photographic Society—Exhibition of Work and Slides, March 25th.

Lancaster Photographic Society—Lantern Evening, AMATEUR PHOTOGRAPHER No. 1 Monthly Slides, March 31st.

Liverpool Y.M.C.A. Camera Club—Monthly Meeting, March 4th.

Oldham Photographic Society—"Holidays in the Riviera," by Mr. T. Widdop, March 27th.

Southport Photographic Society—"Lantern Slide Making by Reduction," March 3rd.

Wallasey Photographic Association—"Lantern Exhibition," by Mr. D. Kendall, March 4th.

Walton Photographic Society—Annual Meeting, March 4th.

Wigan Photographic Society—"Lantern Slides by Reduction," by the President, the Rev. G. F. Wills, M.A. Ordinary Meeting, March 19th.

It has been decided to hold the ordinary meetings of the

recently formed Liverpool Camera Club on the second Wednesday in each month, in the rooms of the Liverpool College, Shaw Street. There is no entrance fee for members joining during the present year; the annual subscription is exceedingly low, 5s. The executive are Mr. Cecil F. Webb, B.A., L.D.S., President; Mr. James Hawkins, Vice-President; Mr. W. Tansley, Secretary; and Messrs. R. C. Robbins, F. W. S. Burslem, W. H. Glassey, W. H. Jones, and W. A. Brown, Council. Mr. Tansley writes me to the effect that the first meeting of the Society was held on Wednesday, 11th inst. Mr. Webb, on taking the chair, gave an interesting address on "Photography, its various Relations, and the number of Practical Uses to which it is now applied." A limelight exhibition of the work of several members followed. The meeting was earnest and unanimous, from which it is anticipated that the new club will speedily become a success.

Readers of the AMATEUR PHOTOGRAPHER will peruse the following from the *Liverpool Review* of last Saturday's date with interest:—

"One of the most interesting figures at the opening ceremony of the Photographic Exhibition in the Walker Art Gallery, last Friday, was Mr. C. W. Hastings, Editor of the AMATEUR PHOTOGRAPHER, *Photographic Reporter*, *Photographic Quarterly*, and other high-class photographic journals. At the last Photographic Exhibition in Liverpool, in 1888, Mr. Hastings was the only representative of the photographic Press present. Since that time he has done splendid service to the rapidly increasing army of photographers. He has remarkable energy, any amount of 'go,' and is a whale for work."

## Apparatus.

### LANCASTER'S "OMNIGRAPH" HAND-CAMERA.

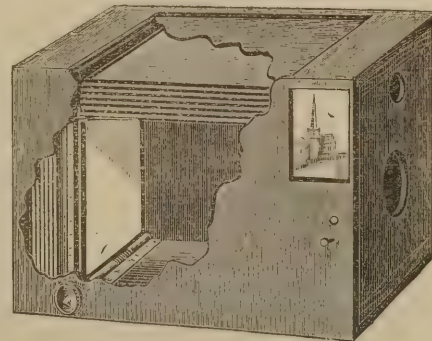
THIS camera consists of a light box covered with black leather, and constructed to carry six quarter-plates in a changing box, the using of which is extremely simple. A shutter is withdrawn and returned to its place, and the plate is ready for exposure; the box is turned round and the other shutter withdrawn and returned, and the exposed plate is then stored behind those which are unexposed. A good viewfinder is fitted to the front of the

camera, countersunk, and a small edition of Messrs. Lancaster's See-Saw shutter is placed on the front; it will give either time or instantaneous exposure. The whole is well made, and does every credit to the well-known character of the firm for careful workmanship. The price is one guinea.

### LANCASTER'S "ROVER" HAND-CAMERA.

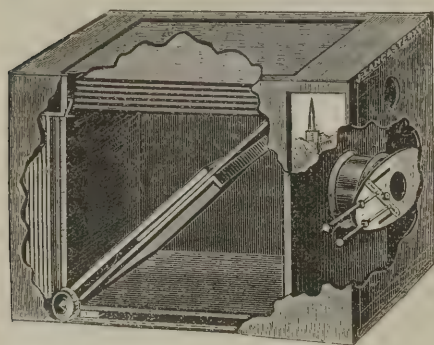
In this camera the particular feature is the method in which the plates are stored in sheaths—in which they are held by a spring-

locking bar—in a reservoir at the top of the camera, whence they are allowed to descend successively by the operation of a lever at the side of the camera. On falling into the exposure chamber they are pressed against a rolling wood shutter, which secures their being in accurate register, and the withdrawal of the shutter allows the exposed plate to fall into a receptacle at





the back, which will hold the whole of the twelve plates the



camera is constructed to carry. The advantage of this method is that any plates which have been exposed can be taken away without any fear of taking the unexposed plates. A countersunk viewfinder is attached. This camera is made in any size, from lantern plate to  $7\frac{1}{2}$  by 5, it is light and compact, and the changing movement

is simplicity itself. The shutter is a See-Saw, which is worked by two small knobs, one of which gives a time, and the other an instantaneous exposure.

#### SHARP AND HITCHMOUGH'S "APTUS" PREMIER ENLARGING AND REDUCING CAMERA.

This camera is made of mahogany, French-polished, and finished, with rack and pinion adjustment, the rear portion forming the camera for a studio, which may have a repeating back for taking one or more negatives on the same plate; a swing-back is

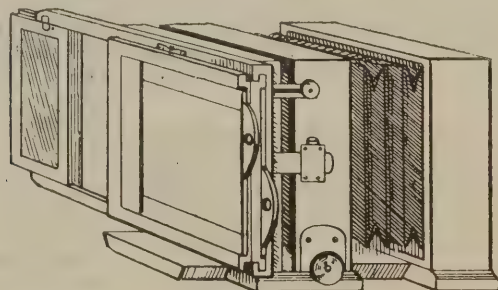


FIG. 1.

also fitted when desired, also rising and cross fronts, which are easily removed when a change of lens is necessary. For the adjustment of the middle body when using the camera for enlarging and having it well extended, focussing arms are fitted so that the centre portion of the camera may be adjusted to its correct position before focussing; an entirely new arrangement for holding and manipulating the negative in any position while focussing on the ground-glass is fitted behind the diffusing screen and immediately in front of a nest of carriers for holding a negative of recognised size. This arrangement is a distinct advance upon

anything previously done in the way of holding negatives in position while enlarging, inasmuch as any portion of the plate may be centralised instantly while viewing the image on the ground-glass. The working parts of the camera are interchangeable, so that the lens may be mounted at the extreme end, when it is found necessary to copy or enlarge from very small and opaque objects. In designing the camera, the objects the makers had before them were (1) that

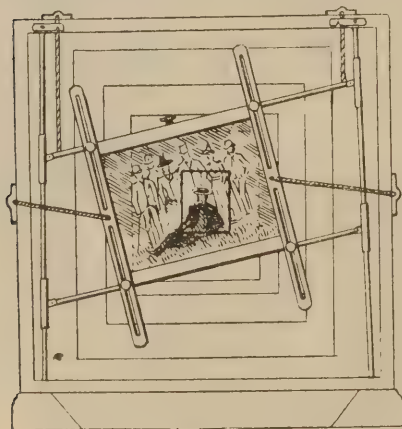


FIG. 2.

the camera should enlarge or reduce from any sizes, negative or positive, of course restricted only by the size of the camera; (2)

that every part should be interchangeable; (3) that the adjustment of the negative, while being held for enlarging, should be accomplished while focussing; (4) that daylight or artificial light, transmitted or reflected, should be used as desired; (5) that the camera shall be so arranged that it will answer all the purposes of a modern studio camera with a repeating back, and having rack and pinion adjustment, swing-back, vertical and horizontal movements to the front, etc. The apparatus seems to admirably fulfil these requirements.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Aldenharn Institution.**—The usual meeting was held on the 17th inst., when the members spent an exceedingly pleasant two hours in looking over the "Travelling Studentship" and "Instantaneous" competition prints kindly lent by the proprietors of the AMATEUR PHOTOGRAPHER.

**Ashton-under-Lyne.**—The recently formed Ashton-under-Lyne Photographic Society has already upwards of sixty members, and on Wednesday the President, Dr. Hamilton, gave a demonstration on "The Platinotype Process." The following were elected officers for the ensuing year:—President, Dr. A. Hamilton; Vice-Presidents, Major Bradley, J. W. Kenworthy, Rev. H. J. Palmer, C. E. Redfern; Committee, W. Chadwick, T. Glazebrook, W. Greenwood, B. Hall, W. Leigh, R. Matthews, A. Storey, G. Wild; Treasurer, R. T. Morsland; Hon. Secretary, George H. Dean, Crawford Terrace.

**Bradford.**—The monthly meeting was held on the 12th inst., when an instructive paper, with a demonstration, was given by Mr. J. Sonenthal, a member, on "A Few Hints on Platinotype Printing and Developing," after which a lantern exhibition was given of the slides sent in to the AMATEUR PHOTOGRAPHER's Monthly Competition No. 2, "Portraiture and Figure Study," many of which were much admired. The next meeting will be held on the 14th April, when the American slides will be shown.

**Brentwood.**—The Brentwood Cycling Club, which has lately formed a Photographic Section, held its annual general meeting on the 10th inst. After the close of the business a collection of photographs lent by the Editor of the AMATEUR PHOTOGRAPHER were exhibited. This is the first that have been seen in Brentwood, and it is thought, now that the members know up to what standard they must work, that increased interest will be taken in this section. A Photographic Committee, consisting of Mr. Leonard Brown (the Secretary of the club), Mr. A. J. Copeland, and Mr. Harry Wallis, was elected.

**Cardiff.**—On the 13th inst. Mr. J. Storrie, the Curator of the Cardiff Museum, gave the members a lecture on "Photo-Micrography." The lecture was very instructive, dealing with insect life, geology, and floral studies, and illustrated with numerous lantern-slides. We regret to learn the Society has recently sustained a severe loss by the death of Mr. D. Josty, one of its oldest and most energetic members. Mr. Josty was a student of the art from its infancy, and both the tyro and advanced pupil could always depend on gaining valuable information from his discourses. He was a most genial gentleman, and a particular favourite with the photographic community of Cardiff, both amateur and professional.

**Croydon Camera.**—At the fortnightly meeting on the 16th inst., the five following gentlemen were elected members: Messrs. Henry Larkin, H. B. Larkin, W. G. Fenn, H. Coombes, and J. Daniell. Mr. Isaac gave a lecture on "Lenses," illustrated by diagrams projected on the screen by means of the lantern. The lecturer's remarks were carefully followed, and an interesting discussion ensued. It was decided to hold a whole-day excursion to Shoreham on Easter Monday, and those desiring to accompany the party should apply to Mr. White. A number of slides were passed through the lantern by Messrs. Oakley, Neeves, Hirst, Corden, White, and others. The one which created chief interest was a reproduction from a flash-light taken at the dinner held on the 2nd inst. Preparation for the exhibition of members' work which opens on the 31st inst. are being pushed forward. Exhibits will be received at 96, George-street, from Monday 23rd to Saturday 28th. Wall's "Dictionary of Photography" was added to the library.

**Falkirk.**—The Hon. Secretary writes:—"We had a meeting on Wednesday last, the 11th inst., to arrange for this year's exhibition and competition, which will be held early in November. We are offering in all seven medals (two gold and five silver). We have three competitions, No. 1 being ordinary silver printing; No. 2, bro-



wide printing; and No. 3, enlargements. For No. 1 competition we offer one gold and two silver medals, the same being offered for No. 2, and one silver medal only for No. 3. We have also drawn out a syllabus for our summer's outing, and the most selected spots in Stirlingshire and Fifeshire have been fixed on. Our members are all doing very good work, and there will doubtless be a hard struggle for the prizes at the end of the season."

**Glasgow and West of Scotland.**—The usual meeting was held on the 16th inst.; five members were elected. Mr. J. W. McKenzie gave a description and demonstration of the parchment Collographic process, recently brought before the London societies by Mr. Warnerke. Mr. McKenzie produced a number of excellent prints, and the process was watched with keen interest by the members. Mr. Hugh Reid exhibited a camera fitted with a telescope as a focussing finder, and showed negatives of vessels in motion taken with the apparatus. The meeting closed with a show of lantern-slides, amongst which were ninety-five views in the Yellowstone Park, U.S.A.

**Haltwhistle.**—The ordinary monthly meeting was held on the 8th inst., the Vice-President in the chair. Dr. Speirs gave a practical demonstration on "Enlarging on Bromide Paper." He first of all mentioned the many advantages to the possessor of a small camera, over the owner of one of larger size—such as a considerable saving in the outlay for plates and chemicals; more portable, and consequently greater ease in the different manipulations. He touched on the best lenses and condensers for enlarging, and the different luminants used, finally describing the process of coating with emulsion, etc. He then exposed a half-plate negative in his ordinary camera, pointing the lens through a partition in the room specially made, and reflecting the view on to a drawing board. Using a lamp to focus by and burning twelve inches of magnesium wire behind the negative with a sheet of ground glass between to diffuse the light, a first-class enlargement of nearly five diameters was the result. He afterwards made an enlargement of seven diameters as an example of what to avoid, a point at which photographic enlargements, both technically and pictorially, cease to be pictures and become eyesores. The next meeting will be held on the 28th inst., when there will be a lantern exhibition.

**Hackney.**—The ordinary meeting was held on the 12th inst., when a paper and demonstration on "Bromide Enlarging" was read by Mr. S. H. Fry. Dr. Roland Smith presided. The Secretary issued circulars inviting members to send pictures for the forthcoming Palace Exhibition. It was announced that Messrs. Barton and Carpenter had again secured prizes, the latter gentleman obtaining one at the Liverpool Exhibition. Mr. Fry then gave his paper and demonstration. He prefaced his demonstration by explaining the best kind of lens to use, and the diaphragm, advising the use of as large an aperture as would be consistent with sharpness and atmospheric effect. For vignetting he made a hole in a card and obtained the vignetting effect by a rotary motion. If one part was not properly exposed it could be treated locally, or re-exposed by washing off the developer, and bearing in mind that the paper was only about one-third as sensitive as it was before. As a very good way to gauge exposure when in doubt, he said for a matter up to three minutes, he advocated the placing of a strip of paper across the exposure band, and giving a number of exposures right across, taking a record. Then, after development, the correct exposure could be decided on. The lecturer advised the use of plenty of safe orange light, and when judging the density it could best be done by looking through the paper. With respect to developers he preferred the ferrous oxalate at present, though eikonogen may eventually usurp the place. The lecturer said he had found the acid baths unnecessary, provided the developer was perfectly washed out of the paper, and, moreover, if acid was conveyed to the fixing bath, there was danger of a formation of deposit of sulphur. He advised the soaking of the paper prior to development in distilled water. Next meeting April 9th, "Hand-Cameras."

**Holborn.**—On the 13th inst. about thirty-five members were at the club-room to hear a demonstration by the Platinotype Company, who had promised to attend on this evening, but on Friday morning they wrote to say that owing to the short notice they would be unable to attend. The club federation scheme was then discussed at some length, after which two new members were elected. Prints of the flash-light groups taken at the exhibition were on view.

**Ireland.**—An ordinary meeting was held at 15, Dawson Street, on the 13th inst., Mr. H. Bewley, Vice-President, in the chair. A discussion on hand-cameras was opened by Mr. J. White, and a large number exhibited. Subsequently a number of lantern-slides were thrown upon the screen, being contributed by the following members, viz., Dr. Cosgrave, Messrs. M. Hedley, J. H. Hargrave, H. E. Ivatts, N. Colgan, and L. Meldon. Mr. Hedley very kindly presented the Society with the "Parvenu" flash-lamp for the use of the members.

**Kendal.**—The monthly meeting was held on the 11th inst., Mr. Isaac Braithwaite in the chair. After the transaction of business relating to the affairs of the section, Mr. Samuel Rhodes gave an

admirable lecture on "Focussing, etc." He explained at the outset that he had not been able to write out a paper, as he had originally intended, but gave almost lucid and graphic account, dwelling, firstly, on the position of the lens and stop; other kindred details, ground-glass, etc., followed, and finally touching on "Naturalism." This latter was productive of considerable discussion and great difference of opinion. At the next meeting hand-cameras are to be exhibited, and short papers read respecting them. Members possessing these instruments are requested to communicate with the Secretary.

**Leeds Y.M.C.A.**—The annual entertainment provided by the members of this club took place on the 10th inst., in the Shaftesbury Hall, South Parade. The President, Mr. Godfrey Bingley, was in the chair. Over 200 slides, the summer's work of some of the members, were shown upon the screen. They included many views taken in Yorkshire and the adjacent counties, as well as some of places in the south of England. The slides were the productions of Messrs. Emsley, Hawksworth, Waddington, Denham, Plews, Eastwood, Garbutt, Gaines, and the President. Those shown by Mr. Waddington comprised some very fine examples of instantaneous photography. Mr. Plews exhibited slides for which he secured a bronze medal in a competition, and the President's contributions included slides of landscapes for which he was recently awarded a gold medal. The lantern was operated by Mr. Garbutt to the satisfaction of all. There was a numerous attendance.

**Leicester.**—A meeting was held on the 11th inst., Mr. J. Porritt in the chair. The ballot was taken for one member, who was unanimously elected, and one gentleman was proposed and seconded for ballot at next meeting. A communication was read by the Hon. Secretary from the Midland Railway, in response to an application from this society for reduced fares for members when travelling on photographic journeys, to the effect that having considered the question, the management do not see their way to grant the request. It was resolved that this society place itself in communication with the secretaries of various neighbouring societies with a view of forming an association for obtaining facilities in this direction. Mr. Geo. Bankart then gave a demonstration on "Autotype or Carbon Printing." Having prefaced the demonstration with a short but precise description of the principles of the process, and the various results from different conditions of exposure and heat in development, he proceeded to develop two 11 by 9 pictures printed on the Autotype Co.'s tissue, and the various stages of development from squeegeeing on to opal to the finishing of the process by development of the picture by hot water, was eagerly watched by a throng of interested listeners, to most of whom the process was entirely novel. The demonstration was a perfect success, both processes yielding fully-developed pictures, proving the immense value of the branch of the art. It was announced that at the April meeting Mr. Porritt would read a paper on "Photography, Past and Present."—By the invitation of Mr. F. G. Pierpoint, Vice-President, a large gathering of the members and their friends took place at the Temperance Hall on the 12th inst., when a most enjoyable entertainment was given in illustration of the high standard of excellence attained in the art of photography and also of the really admirable work which has been accomplished by members of the Society. Mr. J. T. Cook, the President, who acted as Chairman for the evening, remarked, in introducing Mr. Pierpoint to the audience, that the meeting was the first held in that hall in connection with the Society, which was started a few years ago for the purpose of developing a taste for photography. The first part of the programme consisted of a number of photographic views, mostly the work of Mr. Pierpoint himself, of places in "our own country," which were thrown upon the screen by the aid of the lantern referred to. In the concluding portion of the entertainment Mr. Pierpoint "personally conducted" his numerous audience to different countries of Europe, and also to Palestine and India, to Norway, Rome, the Riviera, Spain, and the Holy Land. The entertainment was brought to a close with a flying visit to Paris and a view of the Eiffel Tower at night, with special effects. A number of vocal selections, arranged by Mr. W. F. Quinn, were rendered at appropriate intervals. Mr. Charles W. Hastings, the Editor of the AMATEUR PHOTOGRAPHER, was present, and at the close of Mr. Pierpoint's lecture addressed a few words of encouragement to the workers in photography that were present, calling special attention to the excellent work done by their immediate past President, Mr. G. Bankart. The entertainment was a most creditable one and highly appreciated.

**Liverpool.**—On the 11th inst., in the Walker Art Gallery, two lime-light demonstrations were given to the members of the Amateur Photographic Society, the first at eight o'clock by Mr. Charles W. Hastings, Editor of the AMATEUR PHOTOGRAPHER, etc., and the second by Mr. John Hargreaves. Both gentlemen had full and highly-appreciative audiences. Mr. Hastings' demonstration took the form of an exhibition of the prize sets of lantern slides sent in to various competitions organised by the AMATEUR PHOTOGRAPHER. Most of the pictures were of the very finest quality, and frequently elicited enthusiastic applause. Mr. Hastings described the different



sets in a racy manner, which added considerably to the enjoyment of the lecture. Mr. Hargreaves is known to Liverpool audiences as a most humorous lecturer, and his demonstration, "The Hundred of Wirral," is also familiar to a large number of people on this and the Cheshire side of the Mersey. Needless to say, the lecture was listened to with rapt attention. On the 12th inst. the lecture was entitled "The Sunny Coasts of France and Italy," which was delivered by Mr. G. E. Thompson, and 120 views taken by the lecturer were shown. The frontispiece was of a rich dark blue, and the great variety of colours of the various slides formed a pleasing feature of this set of views. The colours were all obtained by chemical means and not by hand painting, a process which Mr. Thompson does not hold with in lantern photographs. Many scenes of interest were shown between Marseilles and Genoa, not the least so the admirable views of Monaco and Monte Carlo, well seconded by the telling little history of the principality which accompanied them. There were earthquake scenes in San Remo and Diano Marina, carnival scenes in Nice, grand mountains around Mentone, an effective night sky at Bordighera, and so on to Genoa. Some of the gems were reserved till the last. The second lecture was a repetition of the AMATEUR PHOTOGRAPHER competition slides. This exhibit is certainly most interesting. A slight novelty was introduced during the day of a regular musical afternoon from three to five, which will be repeated each day.

**Liverpool Camera Club.**—The first meeting of this new Society was held at the Liverpool College, Shaw Street, on the 11th inst. Mr. Cecil F. Webb (President), on taking the chair, gave a most interesting address to the members and friends present, taking for his subject photography in its various aspects, and the numerous uses to which it has hitherto been practically applied. This was followed by the exhibition of an extensive collection of varied slides taken during the past season, and passed through the lime-light lantern with admirable effect, under the careful manipulation of Mr. W. Anderson Brown. A most enjoyable evening was spent. The Liverpool Camera Club is likely to become a success, the names of a number of gentlemen desirous of membership being already before the Hon. Secretary, Mr. W. Tansley, 14, Wentworth Street, who will be pleased to furnish further particulars on application.

**Louth.**—The members of the above Society held their last lantern night of the season in the drawing-room of the Hon. Secretary, Mr. S. Francis Clarke, on the 9th inst., Captain Ranshaw, the President, in the chair. About 100 slides were submitted by members for exhibition. The whole of the slides proved of very fair average quality, while many of them were of exceptional beauty. A fine set by Mr. Clarence James, "It's you, Jack," "Over the Garden Wall," and a "Chip of the Old Block," proved great favourites. A fine group of sheep and some good slides of Croyland Abbey, by the Rev. J. M. Coates, were well received, and Mr. Coates is to be congratulated in possessing so good a selection of negatives of beautiful Croyland. Mr. Forman, jun., among the younger workers, sent in some very promising work. "Hallington Bridge" showed good taste in selecting the view, and fair manipulative skill in lantern-slide production. Mr. Burdett's set contained slides by both the wet and dry processes, the most notable, "The Old Stag Inn, Earls Barton," "The Eleanor Cross, Geddington," and a fine slide of the moon from a negative taken by himself, probably the first photograph of that luminary taken in this district. The slides by the Hon. Secretary contained several of his now well-known studies, "The First Quarrel," "What Love Hangs By," "Love's Young Dream," etc., and were fully appreciated by those present. To the only lady member exhibiting—Mrs. Clarke—was possibly due the greatest number of novelties, including "Dreaming," "Winter Gleaning," "Desolate," "Au Revoir," and "Hoarfrost," the two latter proving the gem slides of the evening. The Chairman announced that the next meeting of the Society will be on Monday, the 13th of April; subject, "New Members' Work."

**North Kent.**—A meeting was held on the 11th inst. A communication was read from the Meteorological Committee of the British Association, asking for copies of any photographs of interest on the subject. The proposed Photographic Institute now being founded by the Photographic Society of Great Britain was discussed. It was thought to be a necessary institution. The next meeting will be held on April 9th, when the "In and About Columbus" American slides will be shown.

**North Middlesex.**—At the meeting on the 9th inst., Mr. Goodhew in the chair, in the unavoidable absence of Mr. Friese Greene, who was to have addressed the Society upon "A New Sensitive Salt," the evening was devoted to society business. Mr. Goodhew reported proceedings taken at the meeting called by the President of the Toynbee Club re federation of societies. The question was discussed, and Messrs. Goodhew and Cherry were elected to represent the Society at future meetings, with full power to act. A field-day at Rickmansworth was arranged for Easter Monday.

**Oxford University.**—On the 27th ult. a well-attended meeting was held in the rooms of Mr. O. V. Darbishire (Balliol College), 95, High Street. Mr. Darbishire read an interesting paper on "Photo-

micrography," which was illustrated by a large amount of apparatus, diagrams, and prints. The paper was followed by a discussion in which many members joined. Mr. Darbishire explained many difficulties, and said he would be more than satisfied if his paper became the means of inducing even one member of the Club to take up this interesting branch of photography. A question-box was then started for the first time, and an instructive discussion followed on the questions which were asked. The following officers were elected for the summer term: President, Mr. H. W. Cave (Queen's); Treasurer, Mr. J. Walker, M.A. (Christ Church); Secretary, Mr. A. J. Clay (New College); Committee, Mr. R. G. Barnes (B.N.C.), and Mr. O. V. Darbishire (Balliol). On Monday, the 9th inst., the Club gave an open lantern evening. The Rev. W. H. Price, M.A., showed and described many beautiful slides of Switzerland and Italy. Many other members contributed slides, including the Rev. H. Bedford Pim, M.A., Mr. H. W. Cave, and Mr. Pennyfather.

**Photographic Society.**—At the meeting on the 10th inst., Mr. J. Glaisher, F.R.S., President, being in the chair, it was announced that Captain A. M. Mantell, R.E., had been elected Hon. Sec. by the Council, and that Dr. Lindsay Johnson had been appointed librarian. Letters were read from Colonel Waterhouse and M. G. Lippmann, the latter promising to send some of his photographs in colour at an early date. Messrs. A. C. Braham, W. Grove, G. McDonald, and H. Young were elected members of the Society. Sir David Salomons read a paper on "Standard Registering Slides and their Mode of Use," in which he described an improved form of registering cross. He then showed and explained his optical lantern, and exhibited a number of effect slides to demonstrate the accurate register he was able to secure by his improved crosses. Mr. W. E. Debenham then demonstrated the effect of throwing overlapping coloured discs of light upon a screen. The Chairman then announced that at the next technical meeting, to be held on the 24th inst., the subject for discussion would be "Hand Cameras," and he invited members to bring their cameras with them. On the 31st inst. there would be a lantern night and a discussion on lantern matters. Mr. W. Willis would read a paper on Platinotype at the meeting on April 14th.

**Putney.**—On the 11th inst. Mr. G. Davison gave his promised lecture on "The Art Side of Photography," before the members of this Society. After a few brief remarks on the relation of art to photography, he divided his lecture into the following sections:—Tone, Balance of Lines, Focus, etc., illustrating his remarks under each heading by handing round for inspection numerous prints, all of which were thoroughly appreciated. The printing in of clouds, the trimming of prints, and the mounting and framing in the most effective manner received his attention, as did the effect of an addition of mercuric chloride to the platinotype bath, the use of lenses, stops, and finally pinhole photography. At the close of his lecture a discussion took place.

**Richmond.**—At the weekly meeting on the 13th inst., Mr. Cembrano presiding, photometers and actinometers were discussed, and specimens of Decoudun's actinometer and Watkins' exposure meter for camera work, and Sawyer's, Burton's, and others for printing purposes, were shown and explained.

**Sheffield Optical.**—The second annual conversazione and lantern exhibition in connection with the above society was held in the Cambridge Hall, on the 11th and 12th inst., and was a great success in every way, the hall being crowded each evening. On Wednesday the hall was opened from six to eight for the exhibition of pictures by the members; photographs, photographic and lantern apparatus, etc., kindly lent by Mr. G. V. Yates, Mr. Preston, Messrs. Hibbert Bros., the Sheffield Photo Company, and Mr. J. Christie, after which there was an entertainment, presided over by Councillor A. M. Wilson. The President of the society (Dr. A. J. Manton) delivered a short address, in which he pointed out the vast improvement that had been made in the lantern, and the many uses to which it was now put, and also spoke of the great advance the society had made since its formation thirteen months ago. During the evening a large number of slides, the work of the members, were shown on the screen by means of Mr. H. Staniforth's splendid triple lantern; also slides lent by Mr. T. G. Hibbert, and a magnificent series of slides lent of the London Lantern Society, consisting of flower studies and views of English cathedrals, which were acknowledged to be the finest shown in Sheffield. On Thursday the exhibition was open from two till eight, and afterwards a similar entertainment was given, presided over by Councillor W. R. Carter.

**Shoreditch.**—The first meeting in connection with the proposed photographic club for Shoreditch and district was held on the 16th inst., in the Coffee Rooms of the "London Apprentice," 333, Old Street, E.C., when the following resolutions were adopted:—Name of club to be "The East London Photographic Society"; meeting nights, first and third Monday in each month at 8.30 p.m.; place of meeting, coffee room, "London Apprentice," 333, Old Street, E.C.; officers to consist of President, Vice-Presidents, Secretary, and a Committee of six, four to form a quorum; annual subscription, five shillings, payable 1st May; hon. members, ten shillings. The meeting



was adjourned till Tuesday, the 24th inst., when the election of officers will take place.

**Stockton.**—The usual monthly meeting was held on the 10th inst., Dr. Stainthorpe, President, in the chair. After the usual business was got through, the society's monthly competitive pictures, "A Winter Scene," were passed round for inspection and voted upon. Mr. Ellam was declared to have received the largest number of marks. On the 16th inst. a special lantern evening was held, when a series of views, illustrating Holland, were passed through the lantern by Mr. J. Stagg Byers, J.P., before a large attendance of members and friends, Mr. H. Macdonnell, with his usual good grace, describing each slide.

**Toynbee.**—On the 10th inst. Mr. A. W. Price gave a very interesting description of copying woodcuts by photography, illustrated with some fifty lantern slides, copies of some of the best woodcuts, many of them very rare, and considering that the paper upon which they were printed had in many cases turned yellow with age, the whites of the slides were very good. Mr. Price thought that isochromatic plates would be very useful in work of this sort.

**Tunbridge Wells.**—The ordinary monthly meeting was held on the 12th inst., the President (Mr. F. G. Smart) in the chair. A communication from the Brighton Society was read by the Hon. Secretary as to whether the members would join them in an excursion to East Grinstead on the August Bank Holiday, which was agreed to, and the Hon. Sec. was instructed to write to that effect. Mr. F. W. Ellis was duly elected a member. Dr. Abbott gave his lecture on "Optics." The lecture was profusely illustrated by diagrams and explanatory experiments, and was most attentively listened to. The lecturer last year had offered them a prize for the best photograph of trees without leaf, which was not awarded on account of the few entries; but he had kindly allowed it to be competed for this year, the conditions being the best six photographs of trees without leaf.

**West London.**—At the meeting on the 13th inst., Mr. W. A. Brown (President) in the chair, the Secretary announced that he had heard from the Assistant-Secretary of the Photographic Society of Great Britain to the effect that that Society had resolved to support the railway rates memorial, and also read a letter from the same gentleman to the effect that members would be welcome to view the Exhibition of Collotypes at Great Russell Street. The President announced the result of the meeting called by Mr. Biden on the subject of federation, and said he thought the smaller societies would be influenced largely by the action of the parent Society in the matter. The Council had, however, resolved to send two delegates to the next meeting on the 23rd inst. Mr. Hodges was inclined to doubt if it was worth while to do anything until more was known about the scheme. Mr. Roland Whiting read a paper on "The Laws of Art as Applied to Photography." A long discussion ensued.

**West Surrey.**—The members held their third annual exhibition at Crichton Hall, Clapham Junction, on Thursday, Friday, and Saturday last. There were displayed on the walls about three hundred photographs, mostly the work of members on the several outings during the past season, and generally speaking, not only was the number of prints larger, but the character of the work was better than that of previous years. There was a large attendance on the first day, when an attractive musical entertainment was provided in addition to the other attractions. The concert was interrupted about half-past nine and two gentlemen connected with Messrs. Marion's, took several flashlight portraits of the audience, using for the purpose two of Mr. Shipley's arrangements, one on either side of the camera. A number of very excellent slides were then passed through the lantern, and the evening was voted a great success. Lantern exhibitions were also given on Friday and Saturday.

## Quarterly Examinations in Photography.

**Question 22.**—Copy p. vi. of this week's (March 6th, 1891) AMATEUR PHOTOGRAPHER, one-third size.

**ANSWER.**—I first pinned the page (upside down for convenience in focussing) on a board fixed vertically at right angles to another board on which the camera rested. I referred to a table for enlarging and reducing which is given in the almanacs, and found that using a 6 in. focus R.R. lens, the distance from centre of lens to the original should be 24 inches, and the distance from lens to focussing screen of camera should be 8 inches to reduce to one-third size. I carefully measured these distances, and adjusted camera to them, and then measured page vi. and also the one-third size image on focussing screen, and further adjusted camera until as exact as I could get it. I exposed at four o'clock, afternoon, under a skylight (which was, unfortunately, covered with snow), stop  $f/18$ , with lens at normal focus, but at present focus of 8 in. instead of 6 in. the value of the top would be  $f/24$ . I gave an exposure of 14 or 15 sec., and deve-

loped with pyro and ammonia, the pyro being in excess of about half as much again as the normal developer.

The print is on Eastman B bromide paper; exposure, 30 sec. to a gas burner; developer, hydroquinone (Thomas' formula).

DEVELOPOID.

**Question 23.**—Write a brief note on heliochromy.

**ANSWER.**—Heliochromy, or photography in colours, is usually taken to mean direct production of a coloured positive by photographic means, in contradistinction to processes where photography is the means for producing surfaces for printing in different colours in the press.

All or nearly all investigators have confined themselves to the production of direct positive reproductions of the colours, and not, as is the usual method, produced first a negative and then from this negative positive reproductions.

Sir J. Herschel wrote in 1886, "What is really wanted in the arts is a negative which will produce naturally coloured positives by the usual process of photographic reversal, no matter what the hues apparent on the negative may be. . . . This increases immensely the difficulty of the enquiry, as the greatest apparent success in the direct production of colour may prove the most certain road to failure in the ulterior processes of reproduction and multiplication."

Although this seems to be the most obvious view to take of the matter, no one seems to have done anything in this direction as yet. Seebeck, Becquerel, Niépce de St. Victor, Poitevin, and St. Florent all seem to have confined themselves to perfecting the methods of obtaining coloured images on paper or plates coated with silver chloride, the chloride usually giving the best colour results. The colours reproduced were usually those of the spectrum, the reproductions generally being only an approximation to the originals, and becoming obliterated on exposure to light. A principle which has been applied successfully to mechanical printing in colours, and of which an example was given in the *Photographic Quarterly*, is described by Mr. Ives, an American experimentalist. "This principle may be conveniently stated as that of producing sets of heliochromic negatives, by the action of light rays in proportion as they affect the sets of nerve fibrils in the eye, and images, or prints, from such negatives with colours which represent the primary colour sensations."

The latest step forward in the problem is that of M. Lippmann just published. He attacks it from a physical and not a chemical point. It is proved that the iridescent colours of soap bubbles and mother-of-pearl are due to the superposition of minute films, which reflect the light waves and produce the phenomenon of interference. M. Lippmann has succeeded in producing the same conditions in a sensitive silver film, such as used in photography, which is developed and fixed pretty much as usual. As far as can be seen, the colours after fixation are permanent, and not affected by light.

DEVELOPOID.

**Question 24.**—It is desired to obtain a relief cast of a seal. The seal has been photographed, and you are in possession of the negative; how would you obtain a cast from it?

**ANSWER.**—There are two or three methods by which this could be done, but the following I think is the simplest. A rather dense transparency is first made from the negative, showing direct when looking at the film. A plate is next prepared coated with gelatine sensitised with bichromate of potash, the film being about as thick as a stout mounting board. This plate is then exposed under the transparency for about the same time as would suffice for an ordinary silver print, care being taken that the light shall fall perpendicularly to the plate, and not obliquely, after which it is placed in cold water for ten minutes, when the parts protected from light by the transparency swell, and stand out in relief. As the dark parts of the transparency represent the sunk portions of the seal, a gelatine mould will be formed from which a plaster cast can be taken. The plate is dried with a soft cloth, dabbed over with oil, and a wood or cardboard border formed on it to form the edges of the mould. Plaster of Paris mixed to the consistency of cream is then poured into the mould, care being taken that no air bubbles are formed, and after this has been allowed to set, it is removed from the mould and the operation is complete.

WORFIELD.

Papers have been received from, and marks awarded to Worfield, Lindum, R. C. M., Electra, Sunesis, Developoid, Spain, E. B. C.

**Note to Answer 22.**—One or two competitors evidently misunderstood the term "one-third the size," taking this to refer to area measurement and not linear, as is usual in photography. Two competitors failed to state the plates they used, only two sent in first-class results, and one print, though good, had been toned to a brownish-black colour with platinum, which did not agree with the original. The chief failure seems to be in not obtaining a dense ground to the negative, and consequent dirty whites in the prints and poor grey letters instead of rich blacks. The print of the successful competitor was exceptionally good.



## To Correspondents.

THE insertion of **QUESTIONS** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4562. **Bath, Dark-Room and Scenery at.**—Would any Bath resident kindly inform as to dark-room, and also the most artistic bits in neighbourhood, etc., with hints as to morning or afternoon light? Any information as to permission required, etc., very welcome.—**PROGRESS.**

4563. **Stops to Dallmeyer's Lens.**—Will one of your mathematical readers kindly inform me what is the f nomenclature of the stops of Dallmeyer's rapid rectilinear lens of  $8\frac{1}{2}$  in. equivalent focus? The stops are marked and numbered as follows—17, 372, X, 2.3, 4.5.—**M. F. Y.**

4564. **Rectilinear Lenses.**—Can any one tell me which is the cheapest rectilinear lens (half-plate) which gives good definition, and let me see specimen photographs taken with it, which would be returned?—**PAUPER.**

4565. **Water Colours and Photography.**—What preparation has to be put on an ordinary silver photographic print to enable it to be coloured with ordinary water colours?—**BUTLER.**

4566. **Switzerland.**—I am in Switzerland, and we have brightly illuminated snow and clear sky with bright sun. There are also black patches of pine trees about. How must I expose and develop a plate which has been exposed to such a view? If I expose for mountains and snow, the black trees are underexposed, and if I expose for trees, the mountains, etc., are much overexposed.—**DAVOS-PLATZ.**

4567. **Hand or Instantaneous Camera.**—Which is most suitable for following description of work? (1) Taking animals which are likely to move and so cannot be properly focussed. (2) Taking views of streets, etc., or places where the obnoxious spectator intervenes to spoil the picture. (3) For ordinary work where, having to carry a heavy camera, legs, and large number of slides, would in many cases deter one from attempting any photography at all. In all cases, good results would be enlarged by daylight on bromide paper.—**CORNWALL.**

4568. **Mounting.**—After I have mounted a print on a plate-sunk or Oxford mount, the mount with the picture on curls a little, and on bending it in the opposite direction it gets into a twisted sort of shape and refuses to lie quite flat. Will some reader kindly give me a reliable way of preventing this?—**DAVOS-PLATZ.**

4569. **Camera.**—Can any one tell me whether Lancaster's half-plate International camera is thoroughly well made and good in every way? Is it portable and light? Any information about this camera will be gladly received by—**BEGINNER.**

4570. **Exposure Meter.**—Can any one kindly recommend me a correct exposure meter, must be good and cheap. Is the Watkin's exposure meter a thoroughly efficient article?—**BEGINNER.**

4571. **Lens.**—Will some kind reader tell me what would be the best kind of lens for taking landscapes and portraits with an occasional attempt at buildings and churches? Am I expecting too much from one lens? Any information on the subject will be gladly received.—**BEGINNER.**

4572. **Photographing of Groups of Ferns and Flowers.**—A paragraph in the **AMATEUR PHOTOGRAPHER** states that a Nottingham lace curtain manufacturer uses this process for the production of designs for his curtains. As I am anxious to obtain a few negatives of such groups, could any of your

readers put me in the way of communicating with the firm referred, or with any one else producing similar groups?—**E. A. W.**

4573. **Lamp Shades.**—Would any one kindly tell me whether Eastman's or other films can be used as transparencies for this purpose?—**MONTIBELLO.**

4574. **Opalines.**Will any one kindly inform me the best way to mount opalines? I have followed out the instructions given me with the glasses, but always get some small air bubbles between, which when dry look like little silver spots. Any information how to prevent this will greatly oblige.—**W. C. L.**

4575. **Drying Prints.**—Following the instructions given in several books as to the best way of drying prints, I recently dried a very large batch between folds of pink blotting paper. On examining them next morning, I found to my disgust they were nearly all stained in places by the pink off the blotting paper. I have tried hot water and other means, but cannot get off the stains. The blotting paper was the best kind, and I cannot in any way account for its marking the prints. Can any one recommend me anything that would remove the stains, also tell me if I should have used white instead of pink blotting paper?—**UNHAPPY BEGINNER.**

4576. **Print Washer.**—Will some one recommend me the best combined plate and print washer they know of?—**WASHER.**

4577. **Electric Light for Dark-Room.**—Knowing some of your readers interest themselves in electricity, I should feel obliged if some one would tell me the way to fit up a lamp for dark-room. Or could they recommend me any book with simple instructions?—**F. POWELL.**

4578. **Lantern Slides.**—I am about to make some of these on Ilford special plates for black tones. There are no directions as to toning sent with the plates, but I am told all lantern slides should be toned. What toning formula is best? Will that for ordinary albumenised paper be suitable, or is toning unnecessary? I will use hydroquinone as developer; my slides will be principally interiors and wood-carving, not landscapes. I have just got Hepworth's "Book of the Lantern."—**J. H.**

4579. **Quarter-plate Converted into a Hand-Camera.**—Can any reader inform me where I can have my quarter-plate camera made into a hand-camera?—**J. H. S.**

4580. **Black Cloth for Dark-Tent.**—Will any of your readers tell me where I can get an inexpensive black cloth for dark box tent?—**G. H. S. (Burnley).**

4581. **Lead Toning and Fixing.**—Can any reader kindly tell me of a good formula for a combined lead toning and fixing bath?—**CHESTER.**

4582. **Lower Wye.**—Will any one kindly inform me which place would make the most convenient centre to stay at down the lower Wye? Ross or Monmouth, or a smaller place preferred, where lodgings can be had. I intend photographing there in May.—**THANKFUL.**

## QUERIES UNANSWERED.

March 6th.—Nos. 4548, 4551.

13th.—Nos. 4553, 4554, 4555, 4559, 4560.

## ANSWERS.

4549. **Book on Toning.**—Enquire of the Editor, or consult Wall's "Dictionary of Photography," which gives about thirty different toning formulae and full instructions for use.—**EDYLLION.**

4550. **Exposure.**—I find a full exposure the best for this work, but you do not give size of drawing to be copied or stop to be used. I find, however, the following entry in my note-book of an oil painting copied this month in an ordinary room near a window, which may be some guide—size of picture, 3 ft. by 2 ft., stop  $f/16$ , time of day 11.30, light fairly good, exposure three minutes, plate Ilford ordinary, result good, negative all detail in shadows, developer pyro and ammonia.—**EDYLLION.**

4552. **Positives.**—You will find the various formulae at the end of the "British Journal Almanac"; they would take up too much space to quote at length in this column.—**EDYLLION.**

4556. **Walking Stick Stand.**—I have seen walking stick stands being made by Mr. Platt, Birkbeck Works, Birkbeck Road, Ridley Road, Dalston, N.E., but do not know very much about them, only that it had no guy ropes; and as for working out designs in brass or wood, you could not go to a better man. He has done some excellent work for me.—**C. WILLARD.**

4553. **Walking Stick Stand.**—Mr. J. M. Turnbull, of Rose Street, Edinburgh, brought out last year a walking stick stand which answers "Eboracum's" requirements. It is made on a principle which is unique among walking stick stands, and it possesses the double merit of being the neatest stand of the kind, and of being perfectly rigid when in use. In appearance it is indistinguishable from a walking stick, and when used as a stand it gives the customary six points of connection with the top. Most dealers keep it.—**J. P.**

4556. **Walking Stick Stand.**—The cheapest yet strongest stand, I believe, is made by J. F. Shew

and Co., 87 and 88, Newman Street, Oxford Street, London, and its price is only 25s. I should advise "Eboracum" to invest in one.—**CHESTER.**

4557. **Red Tones.**—Try a soaking in a saturated solution of washing soda.—**CHESTER.**

4558. **Portraits.**—Large stop and slow plate, certainly, unless the work is very small, working at  $f/8$  with Ilford ordinary and light fairly good; cap off and on will be sufficient exposure.—**EDYLLION.**

4561. **Copying.**—Rack out your camera to double the focal length of lens, and place carte-de-visite at same distance from lens, then slightly focus to get it sharp, place the print as near the window as possible; the exposure would be about a minute on a slow plate.—**EDYLLION.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us **BEFORE TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT:**

**NOTE.**—In this column we cannot advise upon purchase of APPARATUS, PLATES, PAPER, or PHOTOGRAPHIC MATERIALS.

Advice will be given upon questions of "Photographic Procedure," negatives and prints will be criticised, and every help given to the worker in photography.

T. T. S. METCALFE.—We are sure Mr. Baird and many other of our readers will thank you for your kind letter and the copy of rules.

BART ROUS.—Have written to you. Any help in that direction will be of great service.

W. G. THOMSON.—See notice. We can do nothing in the matter of the defaulting member. About the other matter we will write you.

FIRST ATTEMPT.—(A) Write to the Secretary of the Glasgow and West of Scotland Amateur Photographic Association, Mr. Wm. Goodwin, 3, Lynedock Street, Glasgow. (B) Yes, No.

SVET (St. Petersburg).—See rule at head of this column.

S. C. B. (Genoa).—(1) Not considered generally necessary. (2) See rule at head of this column.

W. GUILLMAN.—Any dealer will advise you which to buy and also tell you of the capabilities of the lens. Yes, you can use a carrier. Any reasonable time, provided the plate does not get damp.

J. A.—The one you name, i.e., the West London Photographic Society, would be the nearest.

T. KID.—You will find "Photographic Chemistry" (Medola) a capital book. We send you a list of our own books. They are all written expressly for the use of amateurs.

UMBRIA.—(1) Yes. (2) Yes. (3) We know only of No. 1.

SYCAMORE VILLA.—See rule at head of this column.

J. E. THORNBURN.—The notice has appeared.

H. C. S.—We are not able to give the value of the second-hand lens you name.

TALBOT.—Certainly, you can proceed as you state. Take care that the prints are in true optical contact.

T. G. ELSWORTH.—See our rule at the head of this column. The firm named have a very good changing-box. We do not know anything about the lens named.

H. L. T. H.—Glad you have succeeded so well.

H. S. W. E.—Magazine form would seem to be most popular. Write the firms for particulars. No objection whatever to the use of sheaths. You can see the last camera at almost any dealer's. We cannot undertake to advise. See rule at the head of this column.

F. E. C.—We have written to you.

MUTE.—See note at the head of column, still as your first query involves a general optical principle, we may state that it is a very poor lens that requires No. 5 stop to get both margin and centre in focus.

T. W. HUNTER.—Send on at once particulars of paper you are using. Is it home sensitised, or whose? We will write you and return prints.

SUNESIS.—Imagine the prints for the nonce are yours, and treat them, therefore, as you like.

W. TRELAWEY ADAMS (Natal, S. Africa).—"Our Rose Garden," most fearfully overexposed; the other quarter-plate is decidedly better. The house is tumbling backwards and plate much overexposed; the figures are good. No. 1. Fully exposed and would have stood a little more developing. No. 2. Good. No. 3. There is hardly enough interest in this picture.

WEST BROMWICH.—Do not use the hypo-eliminator, plain water is far better. Pleased to see prints.

R. C. M.—You are rather inclined to underexpose. You can obtain a much better black tone by exposing for a relative time at a good distance from the gas or source of light, and using a developer rather strong in iron, to which you might also add 1 dr. of sulphurous acid to every ounce of mixed developer. Good prints of the cottages and water-



fall; might stand a chance in our competitions. Write us again.

**LEO.**—Use the same proportions and make up 1½ oz. of developer for a quarter-plate print. We will try and let you have prints as soon as possible, but we have unfortunately other work to do as well.

**NIEPCE.**—The statement was evidently copied from an exchange journal, and there is no intensifying action at all. The gentleman named in your letter will call on us this week, and we will ask him about your letter.

**VERNON.**—(1) Would have been improved by deeper printing and deeper toning. It is a very good portrait, however, of "A Grave and Reverend Signior." (2) This is spoilt by the top of the chimney and the end of the house being cut off. (3) We have trimmed a bit off this print, which improves it; it is rather over-toned. We have also just trimmed 1 and 2. Prints returned. Send us some more in a month.

**W. OREWKE.**—A watch spring, to be had from any jeweller's.

**T. F. BELL.**—You are using the tartaric acid solution too strong, add less. Throw away what you have mixed, make up fresh solutions and add the acid gradually till the sulphite smells strong and shows just a suspicion of clouding. Any acid will do, provided you don't add too much; the acid sulphite solution should be quite clear.

**H. W. MALE.**—(1) Yes. The probable exposure would be five minutes under the conditions named. (2) Black needle paper is better than tissue paper, treated as you suggest. (3) We should prefer the potash and soda without any bromide. It acts well on the plates named.

**NOVICE.**—You should always give as much information as to any print sent us; your print is presumably on albumenised paper. It has been shifted in printing or else the plate during exposure, everything has a double outline. It is not toned enough, and you should have added your gold to the boiling borax solution and used it as soon as lukewarm. Try an acetate bath. Varnish your negative and use Indian ink, burnt sienna and carmine lake mixed. The probable exposure would be for rapid bromide paper about 10 sec., for slow bromide about three minutes.

**CORNWALL.**—You have probably over-exposed in No. 1. We will test sample and reply next week. See Query Column.

**MALANTANAPIAN.**—You certainly could use the lantern for enlarging if you prevented the egress of any light from it; but of course you know there are few negatives will stand such an enlargement as you want.

**PHOS.**—(1) We are constantly using the apparatus named with good results. (2) About 12 by 10. (3) The gradation is of course different in the case you mention to that of correct exposure, but you cannot say that the negative is injuriously affected.

**F. H. RUEL.**—Generally those who "do the sneering" are the "Sir Oracles" amongst amateurs, who wish to pose as authorities on anything and everything who know but little really, and think it big to sneer at what men a great deal more experienced than they are use with advantage. The light named is excellent. Let us see some prints by all means. There is no reason why you should not compete even if you get severely criticised.

**JAGO FYCHAU.**—Make the following solution:

Yellow resin, in powder ... 36 gr.  
Yellow wax ... 12  
Benzine ... 2 oz.

Melt the wax and add the benzine, being careful that any flame does not come near the benzine, then add the resin. Pour a little of this on the clean glass, rub all over it, and polish with a pad of clean flannel. The prints won't stick then.

**KRA.**—(1) The advantages of the use of acid sulphite in the negative fixing bath are that it hardens and clears the film and never stains the negative; as the tartaric and sulphite practically form the same thing, there is no question of superiority. (2) The acid sulphite has the advantages, as a pyro preservative, that it is really very effectual in this respect and less of it is needed than the ordinary sulphite used; at the same time rather more alkali is required.

**PYRO.**—The acid sulphite solution can be obtained from almost any photographic dealer. You cannot make it yourself. Try this formula:

Pyro ... 1 oz. bot.  
Sodium sulphite ... 3, avoird.  
Sulphuric acid, pure ... 30 drops.  
Distilled water, to make ... 9 oz.

Dissolve the sulphite in about 6 oz. of water made hot, add the sulphuric acid, shake well, pour on to the pyro, and immediately bottle.

**J. H. TAYLOR.**—Many thanks; your idea is by no means new, though the actual method of carrying it out is. We may utilize.

**W. F. KELLY.**—(1) We quite agree with you and have steadfastly set our faces against such an inartistic colour which cannot be removed when once there. (2) Give them an early chromealum bath, as recommended by Mr. Wall in our correspondence columns a week or two back. (3) If you use the alum bath first and then wash well, the combined bath without alum would give you permanent results. (4) It is

not absolutely necessary to varnish but advisable, the cold varnish will do. We shall shortly have a note on this subject which will help you.

**BORAX.**—(1) Yes the prints require deeper printing, the prints are quite as permanent, but the toning bath is certainly not likely to last long. The fixing bath should be of the same temperature as the toning and washing waters. (2) You omitted to state how much gold you added to your bath, add fresh gold in the proportion of one grain for every sheet, and test the bath to see whether acid or alkaline; if the former, add more borax. (3) All the papers you mention are excellent, it is merely a question of personal taste.

**TEMPUS FUGIT.**—(1) You are choosing curious places for your lights. Generally one tries to avoid the west because of the sun, we should much prefer the east side; put in as much glass as you can; nine cases out of ten you won't want it, the tenth you will, and be thankful then for all you have got. (2) You cannot do better than stick to the lens you have, which will do all you want. (3) A pale grey. (4) Cut small pieces out of an old pair of black kid gloves, and cement with diamond cement over the pinholes inside the camera bellows. (5) You may use either starch, but flour paste makes a more adhesive mountant, though it is more liable to turn rancid; rub 1 oz. of starch or flour to a paste with cold water, add 8½ oz. of boiling water, and boil up once or twice, stirring well, add five drops of carbolic acid, and when cool it is fit for use.

**H. HAMMOND.**—Will you, when next you notice the defect, send us up some plates just as you have exposed them, and we will try and see whether we are not more fortunate than you. The very fact that you find them on different brands of plates proves that it is most likely dust.

**VALOIS.**—Prints to hands. We will tone and write you by post.

**NOTE.**—We have received two negatives, one the exterior of a house, the other of a lady nursing a cat, but we are unable to trace any letter respecting the same. We shall be glad to hear from the owner about them.

**OMEGA.**—The rule given is one which is accepted by all authorities as correct, but the original proposer we do not know. The following, given by Wm. Cheyney in an American magazine lately, may help you:

Let  $f$  = the equiv. focus.  
 $a$  = diameter of lens aperture.  
 $e$  = the greatest allowable error or disc of confusion.

Then  $d$  = the distance of an object upon which, if the lens be accurately focussed, all objects beyond  $d/2$  will apparently be in focus.

Thus:

$\frac{a \times f}{e} + f = d$ , then  $d \div 2$  = nearest point in focus.

Let us take your poser:

$f = 5\frac{1}{2}$ ;  $a = (5\frac{1}{2} \div 8) = 1\frac{1}{16}$ ;  $e = \frac{\pi}{16}$  of an inch.

Then,

$\frac{1\frac{1}{16} \times 5\frac{1}{2}}{1\frac{1}{16}} + 5\frac{1}{2} = d$ , =  $945 + 5\frac{1}{2} = d$ , =  $950\frac{1}{2}$ .

$\therefore d = 79$  ft.  $\therefore d/2 = 39$  ft. 6 in., the nearest point in focus.

If, however, we take  $\frac{1}{16}$  of an inch as the diameter of the permissible disc of confusion, we get results quite different.

Thus:

$\frac{1\frac{1}{16} \times 5\frac{1}{2}}{1\frac{1}{16}} + 5\frac{1}{2} = d$ , =  $373 + 5\frac{1}{2}$  in. =  $383$  in.

$\therefore d = 383$  in. or 32 ft. approx.  $\therefore d/2 = 16$  ft.

This gets you out of your difficulty, we think. It is simply a question of the diameter of the permissible disc of confusion, or degree of sharpness considered desirable.

**ANAXAGORAS.**—The use of the tripod would tend to the production of more artistic work by causing greater care to be exercised in the selection of view. See note at the head of this column.

## Quarterly Examinations in Photography.

### QUESTIONS.

28. Make a lantern slide from the negative which you obtained for Question 22, and forward with the negative and statement of procedure with your answers.
29. What is the best method of collecting silver residues, and is this advisable for an amateur?
30. What is known as Feer's process?

(Latest Day for Answers—March 30th.)

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the SELLER to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. 3d. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, No. 1 to date, 338 numbers, all clean, indexes complete, three binding cases; what offers cash or exchange? — Drummond, Barker's Lane, Sale, Cheshire.

AMATEUR PHOTOGRAPHER, 51 copies, six "Photography;" offers? — Thornton, 48, Walton Street, Chelsea.

AMATEUR PHOTOGRAPHER, complete from commencement, four years bound, rest unbound, clean, as new; price 80s.—W. North, 62, New Road, Aylesbury. Backgrounds.—Three backgrounds in flatted oils, on linen and roller, painted by advertiser during dull business, garden scene, with graduated centre, 8 ft. by 88 in., 12s. 6d.; landscape, with large tree and foliage, 8 ft. by 78 in., 10s. 6d.; pure landscape, with cloud effect, 8 ft. by 78 in., 10s. 6d.; new and perfect; photographs forwarded. — William J. Hare, Photographer, Sutton, Surrey.

Cloth background, on roller, 8 by 6, exterior quite new, 12s.; also paper interior, 8 by 5, 5s. — Walsh, 179, Walter Street, Blackburn.

Bicycles.—Premier Safety bicycle (by Hillman, Herbert, and Cooper), splendid machine, and in first-class condition, with Salsbury lamp and bell complete; £7 10s.; seen by appointment only.—Congdon, 38, Parliament Street, S.W.

Safety bicycle, cushion tyres, balls everywhere; £7 10s.; just cost £14; approval with pleasure.—Cyclist, 7, Dereham Road, Norwich.

Cameras, etc.—Marion's metal miniature camera, with 12 dark-slides, takes pictures 2 in. square, with finder; no reasonable offer refused. — Jackson, 71, Oxford Street, Manchester.

Sands and Hunter's Exhibition quarter-plate camera, new last month, focusses to 13 ins., every possible movement, three best slides, and tripod stand; £1 15s.; list price £7.—Hodges, 87, Chancery Lane.

Hare's cameras. Mr. Gambier Bolton wishes to dispose of a half-plate, with four double backs, leather case, and stand, all in perfect condition, and good as new, cost 12 guineas, price 7 guineas only; also a splendid whole-plate, scarcely soiled, with four double backs, leather case, and good stand, cost 14 guineas, price 10 guineas only. These are thoroughly genuine, and have done but little work.—Address, care of Messrs. Briggs and Son, High Street, St. John's Wood, N.W.

12 by 10 long-focus camera, all movements, pneumatic shutter inside, book slide, carriers, rigid stand, dishes, printing frames, etc., etc., all new; £8 to immediate purchaser. — Hukes, New Road, Dartmouth.

Half-plate box camera, two single slides; 10s.—O. Naylor, Batley.

Condenser, 10 in., mounted on mahogany base, iron standards, enlarging camera, 12 by 15, carriers to quarter-plate; £7.—Wm. Wells, 14, Girdler's Road, West Kensington.

Cameras, Lenses, etc.—Lancaster's stereo Instantograph, with arrangement for taking plates 7½



by 44, and extra bellows for stereo work, best lenses, Iris diaphragms, stereoscopic shutter, three double mahogany dark-slides, fitted also with 7 by 5 rapid landscape lens,  $f/3$ . tripod, stiff case with spring lock, two negative boxes, printing frames, etc., new last season; will take £3, or offers. — L. J. Miskin, 162, York Road, S.E.

Whole-plate McKellen extension camera, with one double slide and Eastman's roll holder in case, together with Ross' 10 by 8 R.R. lens and Kershaw shutter; £11 10s.—Baird, 15, Lothian Street, Edinburgh.

6½ by 4½ camera, rack and pinion, tripod, partition, pair of Optimus 5 by 4 R.R. lenses, three double, one single backs, new condition; £6.—C. Naylor, Batley.

Cyclists' camera, all movements, takes plates 3½ by 2½, six double backs, cost 60s., price 35s.; also 5 by 4 rectilinear and wide-angle (by Wrench), splendid lenses, 18s. 6d. each; quarter-plate stand, 5s.; folding ruby lamp, 3s. 6d.—T. Hall, Skerton, Lancaster.

Superior 5 by 4 Blair camera, all movements, R.L. lens, Dewey's patent instantaneous and time shutter (new), five double F.W. slides, case, three-fold tripod, trays, frames, etc.; bargain, 84s.; cost double.—F. J. Fowler, Park Leys, Stratford-on-Avon.

Lancaster's half-plate 1889 Instantograph camera, instantaneous lens and shutter, three double dark-slides, and two-fold tripod, all excellent condition; £4.—Timson, Lees, near Keighley.

Whole-plate camera, with all latest improvements, three double backs, Wray's R.R. lens, Thornton-Pickard shutter, Lancaster's sliding ash tripod, canvas cases, etc.; £9 10s.—G. Constable, Market Street, Lewes.

Lancaster's quarter-plate special brass-bound Instantograph, three brass-bound double backs, lens, See-saw shutter, Iris diaphragms, complete in lock-up leather-bound case, tripod, dishes, printing frames, etc.; 70s. the lot.—Edwin Jewitt, Matlock.

A large enlarging camera, 7 in. condenser, £2; Mason's cabinet lens, 30s.; 8 in. burnisher, 10s. 6d.; 15 by 12 dark slide, 10s. 6d.; 15 by 12 Ross triplet lens, £6.—Ernest W. Bielby, 24, West Promenade, Dryfield, Yorks.

Half-plate camera (by Photographic Artists' Stores), long extension, reversing back, three double dark slides with carriers, all in good condition; also Instantograph lens and shutter for same, 70s. the lot, a bargain.—Kelly, 26, Rye Hill Park, Peckham Rye.

Dark-Slides.—Six half-plate best quality mahogany double dark-slides, book form, with hinged shutters, new, price 7s. each, or £2 the lot; Wray's 7½ by 5 wide-angle landscape lens, 7½ in. focus, price 35s.—Dollery, 67, Charing Cross, S.W.

Hand-Cameras, etc.—Newton's hand-camera, in red morocco case, with three double backs, splendid R.R. lens,  $f/8$ , two finders for vertical or horizontal pictures, time or instantaneous shutter, can be used on stand with focussing screen as ordinary camera, very best workmanship throughout; cost £7 10s.; for £3 3s.; owner having another camera. Can be seen at offices of AMATEUR PHOTOGRAPHER.—No. 128, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Roberts' hand-camera (for description see article in AMATEUR PHOTOGRAPHER, March 13th), condition perfect, never taken out; £3; or exchange for first-class half plate lens.—Doctor, 27, Chandos Road, Bristol.

Fallowfield's Facile, leather covered, 5 by 4 rapid rectilinear lens, four stops; £5.—M. O. Forster, 32, Binfield Road, Clapham.

No. 1 Kodak, almost new, in leather case; price 50s.; cost £5.—S., 4, Seville Street, Lowndes Square.

Hand-camera, Samuel's quarter patent, new, 4½s.; rectilinear lens, 7 by 5, hood, stops, working  $f/8$ , 25s.; canvas camera case, strong, good straps, leather-fitted, 9s.; approval.—1, Hermitage Mews, Stamford Hill, N.

Hand-camera, quarter-plate, complete with rapid rectilinear lens, six double backs, Thornton-Pickard shutter and finder, in first-class condition, a genuine bargain, price 60s.—A. Mercer, 16, King Street Sparkbrook, Birmingham.

Lenses, etc.—For sale, a pair of Harrison's Globe W.A. lenses, 3 in. focus, cost £4 16s., price £2 10s.; Levi's portrait lens, 15s.; Levetours and Secretan's quarter-plate portrait lens, 15s.; quarter-plate portrait lens, 10s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the AMATEUR PHOTOGRAPHER.)

Ross' No. 5 portable symmetrical, £4; whole-plate Funnell's shutter, 18s.; both new last season.—H., 55, Val Plaisant, Jersey.

Half-plate rapid rectilinear  $f/8$  lens, Waterhouse stops, good condition; 21s.—H. Rowe, Wallbridge, Stroud.

Offers requested for a Lancaster's 1887 half-plate Instantograph lens (Iris diaphragm) and shutter, in perfect condition. Also, wanted, an efficient and handy changing bag for half-plates, cheap for cash.—G. T. Nichols, Broadway, Peterborough.

Fine 7 by 5 rapid rectilinear lens, in new condition, with Waterhouse diaphragms; 30s.—MacComas, 5, Laurence Pountney Lane, City.

5 by 4 portrait lens (by Stanley), Waterhouse stops; price 30s.; or exchange.—Whiteside, St. Nicholas, Cardiff.

Ross' rapid symmetrical, 8½ by 6½, 11 in. focus; value, new, £6 10s.; for £5, or offers.—Address, Editor, AMATEUR PHOTOGRAPHER.

Genuine 5 by 4 doublet lens (by Ross), complete; price 38s.—Lathen, Crawley Road, Luton.

Lens, Optimus 7 by 5 R.R., as new; 38s. net; deposit with Editor.—Middleton, 20, Rectory Road, Stoke Newington.

Ross' rapid symmetrical, whole plate, 12 in. focus, nearly new, cost £6 10s., will sell for £5; also Caldwell shutter, new, with tube out to fit above lens, cost £3 10s.; sell for £1 5s.—Apply, Louis, 14, Upper Ormond Quay, Dublin.

Optimus lens, 7½ by 5, new, also new Thornton double blind shutter; all cost £5; will sell for £3 5s.—Apply, McCabe, Bellville, Donnybrook, Dublin.

Voigtlander's cabinet lens, lens 3½ in. diameter, £10; Decoudun's photometer, 5s.—No. 130, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Single landscape lens, 20 in. focus, 3 in. diameter, price 5s.; c.d.v. portrait lens (by Squire), price 30s.; half-plate portrait lens, in very good condition, £2 2s.; pair stereo lenses, working at  $f/4$ , 10s. May be seen at the offices of the AMATEUR PHOTOGRAPHER.—No. 129, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Magic Lantern, etc.—Treadle lathe, 3 in. centres, iron standards, new, £8 or offers; magic lantern, 3 in. condensers, front lens, moving slides, 16s.; portrait lens, quarter single lens, half, 5s. each; six Tylar's slides, 10s.; bicycle lamp, 3s.—Brine, 105, St. Stephen's Road, Bow.

Lantern, binocular, mahogany body, brass fronts, 4 in. condensers, portrait lenses, safety jets, 10 ft. screen, elevator; offers?—Greaves, 1, Ridding Street, Oldham.

Good magic lantern, 4 in. condenser, oil or lime, 50s.; or exchange, with cash, for good safety cycle.—C. Naylor, Batley.

Roll Holders.—Thornton's 12 by 10 roll-holder, Tourist pattern, has ball indicator, and registers number of exposure; for £5 15s. 6d., or offers.—Address, Editor, AMATEUR PHOTOGRAPHER.

Eastman's 5 by 4 roll-holder, perfect; 23s. cash.—J. E. Ellam, Yarm.

Sets.—Superior set, half-plate, Sands and Hunter's Gem new light camera, brass-bound, double extension, every movement, three brass-bound double slides, Sands and Hunter's instantaneous and time shutter between lenses, pneumatic discharger, Taylor and Hobson's half-plate Casket lenses, 7 in. R.R. and 8 in. view, with Iris diaphragm, Ashford's Cyclist tripod; list price £20 7s.; accept 13 guineas.—Camera, 6, Montford Place, Kennington Green, London.

Lancaster's Meritote set, complete also Challenge R.R. lens, Gem shutter, changing bag; cash offers, together or separately 8, Portland Place, Venner Road, Sydenham.

Lancaster's half-plate Instantograph set, complete, good condition, £3, or exchange Fallowfield's Facile; Diamond detective, 15s.—Barker, 25, Harlow Terrace, Harrogate.

Shares.—5 Eastman Photographic Materials Co., Ltd. ten per cent. preference £10 shares, £5 paid up, call due in April; what offers?—No. 125, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Shutters.—One Newman's half-plate instantaneous shutter; £1.—Apply, A. B. Larkins, 49, Elsham Road, Kensington, W.

Sundries.—Will give "Gardening Illustrated," Nos. 1 to 135, with indexes, for "Photographic Quarterly" to date.—14, Cedar Road, Leicester.

Still (Bracher's automatic), nearly new, list price 18s. 9d.; what offers?—W. Sully, 18, Mount Street, Camberwell Gate, S.E.

"Photographic Reporter," Nos. 1 to 25 inclusive, good set; cost 14s.; price 7s. 6d.; or exchange vol. I. of "Photography" Wanted, No. 1 "Photographic Answers."—Coulthurst, Collyhurst Street, Manchester.

Optimus wide-angle symmetrical lens, 7 by 5, 38s.; splendid walking-stick tripod, 17s., cost 27s. 6d., both new; "Photographic News," bound, 1888, 1887, 1888; AMATEUR PHOTOGRAPHER, bound, 1889, 1890; four "British Journal Almanacs."—Higgin, 202, Upper Brook Street, Manchester.

Strong spring motor, with good swing machine attached, in going order, all newest fittings to machine, the whole got up in a superior style; cost £9 12s.; accept £2, or exchange photographic apparatus; seen any time.—Godfrey, 248, Caledonian Road, N.

Exchange double-barrelled breechloader and handsome 7-chamber nickel revolver for half-plate camera, with rapid Rectigraph lens, Iris diaphragms, shutter, etc.; must be perfect.—Address, Revolver, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Carson's spring carrier, 12s. 6d., cost 18s. 6d.; Sunbeam safety balls all over, including head, new last season, list price, including lamp, etc., nearly £19; price £11, or exchange for good double extension half-plate complete set and cash.—Pring's, 33, Arundel Square, N.

Tripod.—Tripod, three-fold, and brass triangle, light, rigid, cost 35s., sell 15s.—Apply, Louis, 14, Upper Ormond Quay, Dublin.

Views.—Peak of Teneriffe, Great Caldera of

Palma, views.—Soar, 1, Sussex Villas, Kensington, London, W.

Violin.—Splendid copy of Amati, rich brilliant tone, fine preservation, complete with baize-lined case and silver-mounted bow, only 15s. 6d. lot, great bargain. A quantity of unsoiled music given in gratis. Most genuine offer obtainable.—Write, Graham, College buildings, Ipswich.

## WANTED.

Cameras, etc.—Will give exchange or cash for good camera.—190, Heyside, Royton.

Good half camera, slides, lens optional, compact, cheap; full particulars.—88, Albert Road, Oroydon.

Whole-plate camera, long extension, three slides, good maker, cheap for cash.—Gibbs, Manchester House, Westminster, Bristol.

Cameras, Lenses, etc.—Modern quarter plate camera, rapid rectilinear lens, three or more slides, and tripod.—Gaines, 179, Roundhay Road, Leeds.

Quarter-plate camera, good lens, 2½ to 4 in. focus, without stand; particulars.—Taylor, 28, Gauze Street, Paisley, N.B.

Dark-Slides.—Three metal dark-slides, to fit half-plate Instanto, Tylar's preferred.—F. Powell, care of Arnold and Son, Chipping Sodbury.

Double slides, few wanted, half-plate Instantograph, must be reliable.—MacLachlan, Polytechnic, Coakbridge, by Glasgow.

Hand Cameras, etc.—Kodak, No. 3, in perfect order.—Bolton, Brook Lodge, Watford.

To hire quarter-plate hand-camera from about March 24th to 31st; deposit to value.—Particulars to R. Levershuch, Stanmore, Middlesex.

Hand-camera, any good make, cheap for cash; state full particulars and price.—Moorhead, 30, Rosemary Street, Belfast.

Hand-camera; will exchange mahogany-bodied lantern, 4 in. condensers, also quarter-plate camera, with half-plate lens to use with same.—Harding, Merrow, Guildford.

Lens, etc.—Wray's 5 by 4 R.R., with Iris.—J. F., 95, Portland Road, Nottingham.

Negatives.—Negatives of statuary, views (series preferred), also instantaneous pictures of shipping, etc., cash.—Thompson, care of Mrs. Jones, 20, The Parade, Acton Vale, Acton, W.

Roll-Holder.—Roll-holder for Shew's half-plate Eclipse hand-camera; would exchange Luzo.—Towers, 15, Portsdown Road, W.

Sundries.—Dark-room lamp and cloth bag-ground, 8 ft. by 6 ft., cheap, cash.—Macey, Obansea Schools, Stratford, E.

Scales, weights, and half-plate dipping bath and dipper for wet plate work, also old half-plate bellows camera or bellows.—Sutcliffe, 12, North Street, Burnley.

Tripod Stand.—Light half-plate three-fold tripod stand.—George Kilburn, Eastfield, Batley Carr, Dewsbury.

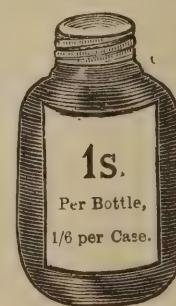
A GENTLEMAN, well known in the photographic world, author and translator of several photographic works, seeks a good position. Has a thorough knowledge of both practical and theoretical photography. Could manage a photographic works, or edit a photographic or scientific journal. Good business push and excellent connection.—Apply, JENA, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

The Tent and Studio may be used in combination, or independently of each other, and everything is sent out complete and ready for use.

Elegant in appearance. Easily erected. Strong, yet portable. Unique in design and price. A wonderfully effective aid to outdoor portraiture.

THE BEST AND CHEAPEST.

SOLE MANUFACTURER:  
**FRED. J. PROUTING, Tilehurst, Berks.**



**POWELL'S COMPRESSED HYDROQUINONE DEVELOPER.**

Will keep indefinitely. For Lantern and all other Plates, Opals, and Bromide Papers.

Results unequalled for Delicacy and Excellence.

Sole Agents—MARION & CO., 22 & 23, Soho Square, W.  
Sole Maker—T. H. FOWELL, Photographic Chemist, 116, Denmark Hill, London, S.E.



# The AMATEUR PHOTOGRAPHER

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FRIDAY, MARCH 27, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.]*

OUR VIEWS.—Improvement in Photographic Printing Processes—Photography and Science—Exhibition of Photographs at St. Petersburg—Mr. E. Muybridge in Germany—A New Phonograph—The Holidays—Quarterly Examinations in Photography—Camera Club for Dublin—The AMATEUR PHOTOGRAPHER in Persia—A Society for Wakefield—Lantern Slides on the Circulating Library System.

LEADER.—Pictures at Liverpool.

LETTERS TO THE EDITOR.—Photography in Natural Colours (Lacy)—Plea for Young Amateurs (Beginner)—Hydroquinone Development (E. A. D.)—New York Exhibition (Beach).

COMMUNICATED ARTICLES.—Composition, and Light and Shade (Robinson)—Photography in Natural Colours (Zenker).

OUR CONTEMPORARIES.—Photographic Times—Anthony's Photographic Bulletin—Wilson's Photographic Magazine—St. Louis and Canadian Photographer.

NOTES FOR NOVICES.—Choice of Plates and Developer.

THURSDAY EVENINGS AT THE CAMERA CLUB.

EXHIBITIONS.—Liverpool.

PROPOSED FEDERATION SCHEME.

APPARATUS.—Lenses by Messrs. Taylor, Taylor, and Hobson.

SOCIETIES' MEETINGS.—Brixton and Clapham—Colchester—Cornish—Croydon Micro.—Enfield—Harlesden and Willesden—Hastings—Holborn—Leeds—Lewisham—North London—Richmond—Sheffield (Optical Lantern)—Southport—South London—Spenn Valley—Sydenham—Sutton—Wakefield—West London—West Surrey—Wigan.

WE have been permitted to see some proofs of what may be rather an important improvement in photographic printing processes. The image is faintly visible when the exposure is complete, and the final result is a very fine black image, no silver is used in the process at all, the resultant colour being obtained in aniline black, which, as our informant states, may be boiled with acids or caustic alkalies without any effect on it. This, if brought to perfection, will certainly not be the first time that aniline has been used, as Mr. Willis, of platinotype fame, many years ago invented an aniline process, which, however, has never become general. The time may come, perhaps, when we shall no longer look upon silver as an absolute necessity for printing, platinotype, diazotype, and photo-mechanical processes becoming more and more general; and some of us would not be sorry, judging from the letters we receive, to say good-bye to toning and our old friend hypo for printing work.

Of the application and importance of photography to science, few of its devotees have any idea; and of the application of our art to meteorology and astronomical work we have, as a rule, but little conception. One of our contributors has forwarded us, however, a transparency of the moon, which we think is exceptionally fine, considering the difficulties or rather the method employed in taking it. The moon's image measures an inch in diameter, and was

obtained by a judicious combination of two or three photographic lenses of long focus, by which an enlarged image was obtained of the size named in half a second, the camera being kept in corresponding motion with the moon by means of hand movement, with the aid of a star and the spider lines of the telescope of a levelling staff.

WE understand that an exhibition of photographs on an extensive scale is to be held at St. Petersburg this year. The date has not yet been fixed, but we shall, of course, keep our readers posted up as to what is being done.

MR. EADWARD MUYBRIDGE, who is well known to our readers from his lectures on "Animal Locomotion," delivered last year in some of our principal towns, has been lecturing in Berlin, and our German contemporaries are filled with reports of the lectures and notes on the same. The lectures seem to have been received with various differences of opinion, some considering them as great advances upon anything yet shown, others as inferior to the work of Anschütz, who is well known as one of the first photographers of the day in this special department. Judging from specimens we have seen of work by both men, we have no hesitation in saying that Anschütz's work is far superior to that of Muybridge for beauty of modelling and lighting of the subjects, some of the studies of undraped men and women in active motion far surpassing anything ever previously attained.

ACCORDING to a brief note in a contemporary, a new phonograph has been introduced in Germany, in which the cylinder of wax is replaced by a concave plate of glass on which the vibrations caused by the voice are recorded by the action of a diamond-pointed stylus, and by this means it is possible to hear the reproduction of the recorded sound sixty feet from the instrument. We also hear incidentally that this is being experimented with to reproduce the recorded marks by photography, so that it may be possible to send by post a photographic reproduction of the receiving plate, and then by a simple process transfer these marks again to glass to be used in a phonograph in the ordinary way.

IF we get a spell of fine weather during the Easter holidays many of our readers will venture abroad on foot, by rail, and on wheels, in the hopes of obtaining some pictures, and although early, there is even now a



uspicion of green on more than one tree and shrub, and even bare branches may be utilised for picture making. Nor need our town readers go far afield for sights and scenes well worth recording by the camera, as many a picture is to be found in one of London's lungs, such as Hampstead, Wanstead, and other open spaces and parks.

THE questions given in this week's issue conclude the first of our "Quarterly Examinations in Photography," and we hope to publish the examiner's report in the AMATEUR PHOTOGRAPHER of the 10th prox. As our readers are aware, we founded this department to induce the less advanced workers to read up and endeavour to become better acquainted with the theory and practice of photography, and in the ensuing quarter we shall give twice a month some practical work to be done, such as developing plates, bromide paper printing, toning, etc., and we shall be glad if our readers will support our efforts by entering for this examination. We exclude recognised authorities on photographic matters, and have arranged for the examiners to give a brief note each week to the answers of each competitor, pointing out the errors in the answers sent; and, judging from the questions set last quarter, we are quite certain they are not too difficult. It would be ridiculous to give purely elementary questions which could be answered by everybody. The examiners have informed us that they have drawn up a new set of rules, which we shall publish next week, and in response to a request from us have given the following list of books as the most suitable for reference. We have appended prices, and any or all may be obtained from our publishers:—

	Price.	Post Free.
s. d.	s. d.	s. d.
AMATEUR PHOTOGRAPHER .. ..	0 2	0 2½
Art of Retouching (Hubert) .. ..	1 0	1 0
Book of the Lantern (Hepworth) ..	3 6	3 6
Competitive Papers on Photography	1 0	1 0
Development (Clark) .. ..	1 0	1 0
Dictionary of Photography (Wall), 2nd Edition .. ..	2 6	2 6
Experimental Photography (Leaper) ..	1 0	1 0
Photographic Quarterly .. ..	2 0	2 0
Photographic Reporter .. ..	1 0	1 0
Platinum Toning (Clark) .. ..	1 0	1 0
Science and Practice of Photography (C. Jones) .. ..	2 6	2 10½
Abney's Treatise on Photography .. ..	3 6	3 10½
Abney's Instruction in Photography ..	3 6	3 10½
Meldola's Photographic Chemistry ..	6 0	6 4½
Eder's Ansführliches Handbuch, in forty ls. parts .. .. each	1 0	1 1½
Wilkinson's Photo-engraving, etc. ..	5 0	5 3
Current numbers of photographic journals, almanacs, annuals, etc.		

WE note that the members of the Dublin Y.M.C.A. have just started a camera club, and will have a dark-room properly fitted up. Mr. L. Davidson, Hon. Secretary, of Lower Abbey Street, Dublin, will give further particulars.

A CORRESPONDENT writes:—"I have now taken in your paper for about 3½ years, so even in Persia it is not unknown."

WE are pleased to announce the formation of the Wakefield and District Photographic Society. Particulars will be found in another column. Messrs. G. F. Firth and Mr. H. H. Halliwell have undertaken to act as joint Hon. Secretaries. Already some thirty-eight members have been enrolled.

MANY may be interested to know that Mr. Wood, of Lord Street, Liverpool, has started the lending out of lantern slides on the circulating library system. A subscription of one guinea entitles the subscriber to the use of 300 slides during the year. Should more be required, they are charged for at the subscription rate. Mr. Wood will, of course, be glad to furnish particulars. The scheme seems to us to meet a want at the present time.

### PICTURES AT LIVERPOOL.

PROCEEDING with the pictures, we came to Class XI., "Animals, from Life." "Highland Cattle and Southdown Sheep," by E. J. Jackson, took our fancy. The prize frame, 485, by Charles Reid, contains good work; "Animals from Life, Melbourne," J. Catto, are very good, especially frame 491. Walter Pollard contributes four choice studies in "Watering," "A Pet Calf," "A Patient Beast," and "Waiting to Go Home." The class cannot be called a strong one, and we should have liked to have seen more variety.

In Groups, Class XII., F. M. Sutcliffe takes a silver medal for his photographs "Sunshine," "Gossip"—faces badly lighted—"Busy Leisure," and "Sitting Alone." F. Bremner sends some clever instantaneous studies (groups), for which he received a bronze medal. Lyd. Sawyer's studies on the Tyne and in Newcastle are admirable. Some very commercial photography is shown by Messrs. Werner and Son, groups of royalties, and "smart" people.

The Architectural series, Class XIII., is a large one, and, as is usual, there is some very fine work. John Collier shows some very clever interiors of the "Pathological Library," Queen's College, Birmingham, taken, we should say, under considerable difficulty. E. S. Gladstone sends a good picture of "Eaton Hall;" George Bankart, good and careful work, of which, perhaps, the best is "Galilee Chapel, Durham Cathedral." E. J. Jackson has four frames of "Old Houses, Worcester and Herefordshire," which are good photographs of very interesting subjects. The interiors "Osmaston Manor," seat of Sir Andrew Walker, Bart., by Richard Keene, are, like all his work, very carefully executed. C. S. Cobb shows several pictures; the best is "Bell Harry Tower," Canterbury. C. Court Cole deserves the bronze medal for his work, which is exquisite; we should have thought a silver medal might have been given to him, and a bronze to some other exhibitor; there is certainly work in the class deserving of recognition. S. G. B. Wollaston has some very careful work quite up to bronze medal standard. E. M. Tunstall contributes good work, especially "Choir Screen, Chester."

In the Architectural Class, XIV., 8 by 5 pictures and under, G. E. Thompson takes a bronze medal for his frame 589, "Treves Cathedral Porch," "Pont Auderner," "St. Castor, Coblenz," and "Perseus, Florence." W. L. Howie exhibits some charming studies of Nuremberg, and C. V. Shadbolt's studies at the Alhambra are worth close inspection.

The Scientific Class is a failure, and has only nine exhibitors. The class includes—Photo-micrographs, no entries; Astronomical, no entries; Geological, no entries; Botanical, some excellent photographs of "Rare Fungi," by S. G. B. Wollaston; Flower Studies, by Count Ritter von Stocker. The other pictures classed scientific are a pin-hole photograph by A. Buschbeck, time, 1 min. 40 sec., pinhole 4½ in. from plate; photographs of skeletons, monkey, badger, hawk, and gannet, by A. Robinson; tones and values of photographs of coloured objects, and four frames heliogravure process, C. Scolik; "Views Taken from a Balloon at an Altitude of 3,000 ft. above the Earth," C. V. Shadbolt, for which he was awarded a bronze medal; "High Mountain Views," M. de Soto, of no great interest; twelve frames of heliogravure process, R. Paulussen, very fine



work, for which he got a silver medal; "Pages from the Book of Kells," Greenwood Pim, makes up a full list of the work contributed to this class. We cannot help calling scientific photography, as shown at Liverpool, a failure.

We have already referred to the Flash-light Photographs of the Countess Loredana, which we must repeat are excellent. Those exhibited by F. Downer of "Professor Herkomer as Filipe" are very good indeed. Still, in this class there are only five exhibitors; we should have thought there might have been fifty.

In the Genre Class, XVI., there is some fairly good work, and no one will deny that S. N. Bhedwar deserves a silver medal for "Two's Company." We were pleased with H. Dudley Arnott's picture "A Drink by the Way," and E. Lloyd Edwards' "Arranging the Day's Sport." W. J. Anckorn's picture is forced and unnatural. "The Solo," J. E. Dumont, was recently contributed to one of the AMATEUR PHOTOGRAPHER Monthly Competitions, but did not then, nor does it now, strike us as having any special merit. "The Invalid and his Pets," C. S. Cobb, another picture contributed to the AMATEUR PHOTOGRAPHER competitions, we like much better. "His Sunday Boots," E. B. Wain, shows some care in composition, and so with many others, simple pictures telling a simple story.

The Enlargements are many of them very good. A. R. Dresser has a good picture in a "Misty Morning." Fred Anyon shows care in his enlargement of "Eventide." C. W. Huson has been awarded a bronze medal for his picture "Early Morning." Albert Chancellor again shows his "Balloon and Parachute" photograph, which is really clever, but does not seem to find favour amongst photographic judges. The proper class, of course, to enter the picture in is "Instantaneous," and to send a print from the *original* negative. "Portrait of a Child," Clarence James, is very fine; so is a "Portrait of a Lady," W. Crooke. There are many others showing real merit.

In the Stereoscopic Transparencies class we are surprised to find so few entries. We note that a silver medal is awarded H. J. Houghton, but had not an opportunity of examining any of the pictures. The other exhibitors are A. F. Stanistreet, H. G. Ridgway, A. Hamilton, J. E. Ellam, Leigh Phillips, and T. S. Mayne, all well-known works in stereography.

...There were a large number of Lantern Slides, and these we cannot attempt to comment upon. Most of them, as we saw them, appear to be very good. G. E. Thompson, who takes the silver medal, is a splendid worker. The bronze medallists are J. Carpenter, flower studies, beautiful, and beyond praise; F. Anyon, Derbyshire views, well chosen; W. L. Howie, Nuremburg and Ober-Ammergau, the most perfect technical work we have seen. A silver medal goes to Priestley and Sons for a fine yacht series. J. W. Wade has a bronze medal for "Coming Storm," "Toilers of the Sea," "Outward Bound," etc., all good work. F. W. Anyon has another bronze medal for cloud effects, etc., etc., which are all up to medal standard.

Several medals are given for hand-camera work, general photography, etc.

The general teaching of the Exhibition is that a very considerable number of prominent workers, especially amateurs, have abstained from sending in pictures; that although there is much good work there is much that is only of very ordinary quality. The exhibits show practically no advance in culture or art, they are so nearly all of one standard. The photographs are all shown to the best advantage, well lighted, not crowded; but still it must be admitted that the standard is low. We should like to know why the pictures of our prominent workers are conspicuous by their absence. In these days of leagues and combinations,

we trust that the best photographers have not formed themselves into a non-exhibition guild. We must admit that upon closely examining the Liverpool catalogue it looks very like it. We venture to think that at no exhibition ever held, or likely to be held, could photographs be exhibited under more advantageous circumstances. The exhibition is and has been an enormous success, but it is disappointing to us to record that the standard of work is far from high, due in a great measure to the holding aloof of prominent workers. As a consequence the awards made by the judges have gone to work which might have been surpassed by those who abstained from exhibiting.

It would be interesting to be "in the know" in this matter. Were the conditions too onerous? should classes have been for amateurs only and for professionals only? The Executive, we know, did their utmost in framing rules and conditions to please all, and we venture to think that they deserved support from many professionals and amateur photographers who did not exhibit.



## Letters to the Editor.

### PHOTOGRAPHY IN NATURAL COLOURS.

SIR,—Your correspondents "Farbenlehre" and F. W. Stow both admit colour to be subjective, but they do not appear to perceive the significance of their admission. The subjectivity of a phenomenon means that it has no existence outside of the subject. How that which has no existence can be photographed passes my comprehension.

That colours can be produced by various mechanical means no one could be ignorant or foolish enough to deny; but that gives no ground whatever for supposing that they can be reproduced by photography. Photography, as I understand it, is merely a method of measuring the actinic values of reflected rays of light, and if as the result of this measurement a fac-simile, more or less correct, of phenomena is set up, it does not, and cannot, reproduce them as they manifest themselves to our senses, because our senses take cognizance of more than mere actinism. The observations of your correspondents therefore appear to me to be altogether beside the mark.

That animal eyes may perceive colour in some degree the same as our own is highly probable, because we are natural products of evolution produced through a long line of animal progenitors, and, therefore, our eyes differ in degree, not in kind, to those of animals. But to suppose that their eyes see exactly as ours do is as absurd as to suppose that their brains reason exactly as ours do. When "Farbenlehre" asks me why a bull hates bright red, I retort by asking him how he knows that a bull does? It is simply one of those popular fancies which go to enliven our existence. If the number of people charged by bulls when dressed in red could be ascertained, it would be found to bear precisely the same proportion to the whole number of people charged, as the proportion of people who wear red bears to the whole population. I have been charged by bulls many times, but I never had a stitch of red about me. I have also been charged by elephants, rhinoceroses, buffaloes, lions, leopards, and other animals, but I am quite sure the colour of my shirt had nothing to do with it. "Farbenlehre" might have found much more plausible illustrations among the phenomenon known to naturalists as "imitation."

It is many years since I studied the phenomena of light, and I do not feel myself at the present time competent to discuss them. But I may be permitted to say that it seems to me that interference can only affect the colours of the solar spectrum. But there are in nature hundreds of colours that are not in the solar spectrum, and cannot be produced by any combination of its colours. If I am right in this, the writer of the article in your last issue is certainly wrong in ascribing to interference the colouring of a sunset. Has he ever seen one about the tropic of Cancer? I have seen hundreds of colours in a sunset that I do not believe could be produced by any combination of the prismatic colours. Or did he ever see the morning and evening glows



in the southern hemisphere said to have been caused by the dust of Krakatoa?

It seems to me that there is too great a tendency to accept without question anything and everything if put forward by a scientific man, clothed in learned phraseology, smothered in obscurity, and concealed in profundity. Some of the learned disquisitions we read (*teste* Koch) almost make one exclaim with Pope—

"See, still thy own, the heavy cannon roll,  
And metaphysic smokes involve the pole.  
For thee we dim the eyes and stuff the head  
With all such reading as was never read;  
For thee explain a thing till all men doubt it,  
And write about it, goddess, and about it;  
So spins the silkworm small its slender store,  
And labours till it clouds itself all o'er."

—*The Dunciad*.

I venture to prophesy, disregarding the adage, that M. Lippmann's discovery, so far as it is called photography in colours, will be relegated to the limbo of forgotten things with all those that have preceded it. I do not wish to be misunderstood. I am no supporter of the argument from experience, and regard it, indeed, as entirely fallacious. For as all things are a becoming, I consider that which is newest, for that very reason, most likely to be truest. Nevertheless, as there are fundamental limits to human knowledge, so there are fundamental limits to physical possibilities.—Yours, etc.,  
G. LACY.

P.S.—Since writing the above I have come across a curious and unexpected corroboration of my contention as to the subjectivity of colour. Casati, in his "Ten Years in Equatoria" (vol. i. p. 249), tells us of the inhabitants of the Welle-Makna region—those Niam-Niams and Mombottus first introduced to our knowledge by Schweinfurth, who though cannibals have comparatively high perceptions of art—that their eyes, though absolutely perfect as far as acuteness is concerned, receive the impressions of three colours only, white, black, and red. And yet we are asked to believe that the eyes of some inorganic substances receive more impressions than those of these highly organised beings!

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#### A PLEA FOR YOUNG AMATEURS.

SIR,—I was pleased to see the letter of A. C. C. in your last issue, which I think can be fully endorsed.

I, like your correspondent, am a member of a photographic society, and therefore feel that any way by which a young amateur can gain attention is most sadly wanted.

I would suggest that a beginners' class should be made in all photographic exhibitions, open to amateurs only of say two or even three years' standing. A tyro is very much handicapped by amateurs who have perhaps practised in photography for upwards of twenty years or more. It shows most clearly that an amateur of even three or four years' standing has no chance whatever of being recognised in such competition.

If medals of small value were awarded, it would be a very strong inducement for beginners to join the societies, and after gaining a prize, to push themselves on to further honours. A young amateur only wants the chance to get started, then he himself is to blame if he does not succeed.

If the committees of forthcoming exhibitions will give this their careful consideration, I venture to think that they will see that something is really needed.—Yours truly, A BEGINNER.

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#### HYDROQUINONE DEVELOPMENT.

SIR,—Will you allow me a few lines of your space in order to compare notes with other workers, or perhaps profit by your editorial advice.

I have been working at photography for about eighteen months, and think the time has come when I should like to be able to develop in a rather less haphazard manner than I am afraid I do at present.

I have read a good many articles on the subject, including Mr. Lyonel Clark's book, but they all deal chiefly, if not entirely, with pyro development; and for certain reasons, principally a love for clean fingers, I always use hydroquinone.

Now, it seems to me that the rule laid down, that slow development tends to hardness, while quick development tends to flatness, does not hold good with hydroquinone. Certainly I find that in developing bromide paper, which is all the practice one can get in the winter, the contrary is the case. If I use a strong

developer I get the shadows black before the fainter details show up at all; while if I use a weaker developer, or if I pour off the developer when the picture is half out, I find that the light details continue to come out while the shadows do not gain much in density. I find that much the same rule obtains with negatives, viz., that by using a weak (diluted) developer I can get a soft negative, and by using a strong one a "plucky" negative. This does not, however, solve my difficulty, which is how to overcome the violent contrasts of an under-exposed plate or the weakness of an over-exposed one. If I use a diluted developer to the latter, it comes out too soft; if a strong one, it runs away with one altogether. I begin to fear that the matter may be summed up by saying that, with hydroquinone at any rate, an under-exposed plate remains an under-exposed plate, and an over-exposed plate an over-exposed one, and that the only choice lies between a soft or a plucky negative, but I hope very much that you or some of your correspondents will enlighten me on the subject. I may say I use Ilford plates and paper, and make up my developer according to the Ilford formula. I believe I am right in saying that the variation of the proportions of accelerator and developer has little or no effect in the case of hydroquinone.—Yours, etc.,  
E. A. D.

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#### THE NEW YORK MAY EXHIBITION.

SIR,—It will be of interest, perhaps, to all amateurs and other photographers to know that arrangements are now in progress for a very large, select, and important exhibition of photographs, including specimens of the best foreign work, to be held in New York, at the Fifth Avenue Art Galleries, between 34th and 35th Streets, May 25th to June 6th, under the auspices of the Society of Amateur Photographers of New York.

It will be the fourth of the joint series of exhibitions undertaken with the aid of the Photographic Society of Philadelphia and the Boston Camera Club.

The prospectus and entry forms have already been sent out, and the judges selected are Thomas Moran, Will. H. Low, and Edward Bierstadt, men well known in the respective branches of art which they represent.

Medals are to be awarded instead of diplomas, the number being limited to twenty-five. Exhibitions of slides will be held four nights during each week, and in a separate room there will be an exhibit of new and novel apparatus.

Foreign exhibitors may send pictures unmounted, which will be mounted and framed by the Committee.

Exhibits should be sent to the Galleries by May 11th, to ensure attention. The Committee prefers that the very choicest work be sent, rather than a large quantity of ordinary pictures.

Exhibits are invited from all photographers, and when received will be carefully attended to. Entry forms will be sent on application, and all correspondence should be addressed to

F. C. BEACH

(Chairman of Committee of Arrangements).

113, West 38th Street, New York.



**Crystal Palace National Photographic Exhibition**—Mr. S. G. Buchanan-Wollaston writes: "Arrangements are being made with a view to facilitate the transmission of Liverpool exhibits to us, by sending a representative to sort and overlook the pictures entered here, and to see to their speedy dispatch. We have already the promise of a great number of exhibits from Liverpool, including the wonderful flash-light pictures by the Countess Loredana da Porto Bonin."

**French for Amateur Photographers.**—Mr. D. Nutt, of 270, Strand, is just publishing a new edition of the "Colloquial French for Travellers," issued as one of the Phonetic Series. The arrangement of the book is easy to understand, and the method of giving the pronunciation excellent. The new edition will contain no less than eight pages of phrases useful, and, in fact, necessary to the amateur who has not had the time or opportunity to make a study of the language. There are also several pages devoted to the wants of cyclists.

**Sensitising Photo-litho Paper.**—Herr Ad. Franz uses the following bath for the above purpose:—

Bichromate of potash...	...	...	40 grammes.
Sulphate of manganese	...	...	5 "
Water	...	...	1,000 "

The sensitiveness of the paper is increased by the addition of the manganese salt, and the washing away of the ink from the exposed parts is prevented also.—*Eder's Jahrbuch*.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER VII.

*Fig. 14.*—We have the strongest light coming in contact with the strong dark in the most cutting manner, in the knee and leg of the falling figure. When this can be done without interfering with the breadth of light, it is of the greatest consequence, both on account of its giving a thickness or rotundity to the group, and also because it enables us to keep the most projecting points and the most retiring in their proper places by analogy to one another. I am aware that the management of light and shade often requires a sacrifice of this principle; where we can accomplish our object without such a sacrifice it has always the most natural appearance. Many accidental combinations and beautiful effects of nature arise, not merely from their possessing a good general form and a pictorial arrangement

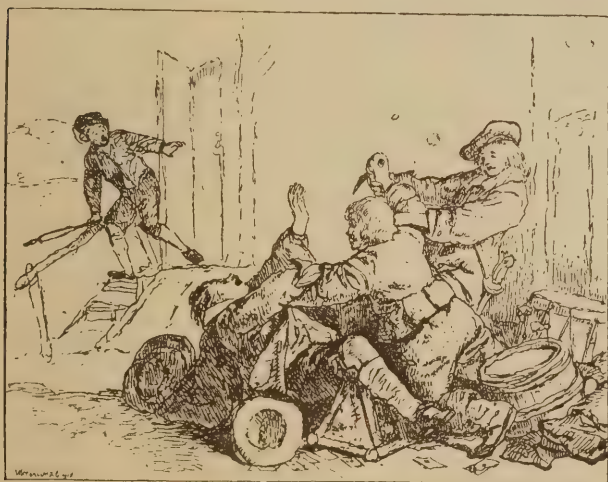


FIG. 14.—TERBERG.

of light and shade, but also from the most projecting points being often assisted by a combination of a harsh cutting line, strong dark and light, or opposition of local colour, and they strike the artist as being applicable to painting; these being the means he finds frequently adopted by the best masters. It is only under such favourable circumstances that the artist can enter the lists with nature; and, having but a flat surface to work upon, he is warranted in availing himself of every assistance science can afford. In arranging objects scientifically, to give them at the same time the appearance of natural accident, is one of the perfections of the art.

As the best practical hints are derived from accidental combinations in nature, whose sudden changes prevent the possibility of sketching, the mind ought to be trained to the most regular and even mechanical mode of arranging the ideas; that in an instant we may be able to determine whether the effects, which we perceive, depend upon a particular form, upon particular arrangement of the light and shade, or upon the manner in which the hot and cold colours are brought in contact. By thus tracing effects to their proper causes, we secure the principal points as a sort of shorthand notes to guide and assist the memory. This practice will also open a road of communication between the eye and the operations of the mind, which neither a hasty sketch nor the most learned dissertation can, separately,

produce. At first it may seem more difficult than it really is; but a few trials will convince the student of its practicability, especially as the effects that strike him to be the most pictorial are generally the most simple.

The cards lying on the ground, in this subject, indicate the cause of the quarrel; and the figure entering from an adjoining apartment gives us a hint of the noise generally attending such brawls. As a moral is here introduced, I shall make a few remarks (otherwise irrelevant to the purpose) in this place. When a picture possesses a moral, it is certainly a great advantage, provided we are not disgusted by its vulgarity, as is the case in the representations of drunkenness, etc., in some of the Dutch school, or by affected sentiment, as in many of the present works of all the schools. The moral must also never injure the picture in its higher requisites. In the early ages, representations of vice were necessary as strong lessons of morality; but as mankind grew more enlightened, they were referred to books, not pictures, for improvement. Besides, an artist ought always to recollect, that he paints for the higher, not for the lower classes of men; and as his business is to convey pleasure, not pain, a little intercourse with society will convince him, that men in all ranks have often enough to vex them, or to produce a variance with their fellow creatures, without hanging up on their walls representations tending to increase either the one or the other feeling. The absence of these considerations in an artist (of which we see daily proofs) dooms his work to that neglect which he ascribes to the want of encouragement to the arts generally. Representations of tragical events also (though possessing a fine moral or sentiment) have received but little patronage in this country; whether it is that they are not suited to the character of the nation, who, though not averse to the representation of a tragedy on the stage, are unwilling to choose a constant companion from such a class, or that there are few of those connoisseurs whose feelings are completely absorbed in the contemplation of high art, is a question which this is not the proper place to discuss: the fact is, however, indisputable.

We have here another example of emphasis. The points our author intended to bring out are scarcely sufficiently visible in the illustration, but will be easily understood when taken with the text.

Burnet here alludes to that which distinguishes art from accident, that is, the systematic arrangement of objects to give them the appearance of nature. Here we have a subject on which photographers differ. Some hold that no arranged figure, however well done, can be natural. It is useless to dress and arrange figures in a landscape so well as to completely deceive them. When it is explained to them how the thing was done, but not before, they immediately recognise the deception, and prophecy after they know but refuse to see the art; just as after they are told a photograph is produced from more than one negative they are able to find the joins (often in the wrong places) and condemn it accordingly. Criticism from knowledge is to be approved, but it should be the knowledge of an assured expert, and not the wild guesses deduced from second-hand information. Imitational criticism may also be wrong. A critic may be original and wrong, but imitations of original and wrong criticisms may be worse. Coleridge says, "To admire on principle is the only way to imitate without loss of originality," but it depends on the soundness of the principle.

On the other hand, students of art cannot admit that there is any art in snap-shot photography. If a picturesque group is met with accidentally and secured by the hand-cameraist, where is the art of the photographer who had nothing to do with the arrangement of the group? This may be true, but it is certain that the man who knows what is good composition will be able to recognise the materials for a good picture better than the ignorant opportunist who knows nothing of art and mistakes what he mis-calls truth to nature as that mystery.

In his second paragraph Burnet hits upon the true reason why a knowledge of composition is of so much value to the photo-



grapher. Nothing in photography can compare in value with the faculty of instantly recognising a subject in nature that will make a picture, and knowing as it were instinctively what should be added or omitted. This knowledge, so like instinct, can only be attained by a careful study of the quantities that go to the making of a picture, and practice. There is no substitute. Some have good taste, which is a very vague term. A photographer with taste only will hesitate so long in endeavouring to satisfy that indefinite quality by altering the point of sight perhaps, or worrying his models, or his cows, or his sheep, until they are either tired in the one case, or frightened away altogether in the other, but the man who knows his business—that is what constitutes a picture—would seldom lose a subject from such blundering causes.

In the last paragraph will be found some admirable observations on subjects for art. Summed up shortly, the picture is all the better for possessing a moral, but the moral must not interfere with art qualities, and miserable and painful subjects are not in good taste.

(To be continued.)

## Photography in Natural Colours.

In the new volume of Eder's "Jahrbuch" an interesting article appears on p. 294 *et seq.*, on "Die Entstehung der Farben in der Photochromie," by Dr. W. Zenker, of Berlin, the author of a "Lehrbuche der Photochromie," 1868, in which, after reviewing briefly the work of Becquerel, Niepce, Poitevin, etc., he points out that Becquerel's prints were only relatively correct as to colour, since the tints were produced upon a brownish-red background, but that if the spectrum itself was thrown on to the same support, it was at once seen that the colours of the results obtained were good. Zenker also points out that the images of painted reproductions of the spectrum are open to considerable exception, for he says—

"Where two colours act on the same point, one will perhaps appear quicker, the other more slowly and weaker, so that, for instance, a green light composed of yellow and blue lights will be reproduced as blue, and just the same in similar cases. It is therefore evident how much more advantageously one may work, in experimenting in photochromy, with the natural spectrum, than with painted originals, since the colours of the latter are compound, those of the spectrum, on the other hand, only simple."

Dr. Zenker then goes on to consider the theoretical explanation of the transmission of light and the formation of colours, giving a table of the wave lengths of the principal lines in the spectrum, and says—

"The height of the waves or the amplitude of the vibrations have up to now not been determined as to their actual size. They are, however, immeasurably small in comparison with the wave-lengths; on the other hand, one can very well reckon their relative size. Thus one knows that the intensity of two equal coloured rays of light is proportional to the squares of their amplitudes, and to these intensities under otherwise equal conditions correspond also the chemical actions. The procedure, when a ray of light exerts a chemical action on a substance, is explained by the idea that the quivering movement of the particles of luminiferous ether contained in the substance is transferred to the particles of the mass of the substance, and tears them one from the other or drives them together. We find, therefore, combination of the elements produced by light (mixtures of chlorine and hydrogen explode in sunlight, and are combined into hydrochloric acid), as well also as a splitting up, and this especially with the compounds of silver. Thus silver chloride  $2(\text{AgCl})$  is first split up into silver subchloride  $\text{Ag}_2\text{Cl}$  and chlorine  $\text{Cl}$ . From the silver subchloride, however, by the further action of light, the silver is separated in a metallic state. This can, moreover, be in many cases of a dark nature, in others of a bright mirror-like surface (*e.g.*, in glass silvering)."

Dr. Zenker then gives an explanation of the phenomenon of "interference," caused by the reflection of the waves of light from the surface of the silvered plate, just as M. Lippmann utilised the same principle in his experiments as explained in the precis of the article by M. Ch. Gravier on pp. 163, 164, March 6th, and as hinted at in the letter from Mr. D. G. Gordon in last week's issue, p. 183. It is interesting to note that this explanation of the obtention of colours by the phenomenon of interference was given before Lippmann had obtained his results, as the MSS. of

Dr. Zenker's article was in the editor's hands by November 1st, 1890, and the writer states that although the alternation of the points of quiescence and the maxima was clearly established in theory, the quiescent or stagnant waves had only been experimentally proved by the work of Dr. Wiener, of Berlin, who had actually photographed them.—Wiedemann's "Annalen der Physik und Chemie," vol. xl, 1890, p. 203, *et seq.* Dr. Zenker continues:—

"Before a silver mirror, on which the rays of light fall perpendicularly, must naturally the points of quiescence and maximum be formed as planes of quiescence and maxima, and the distance from one maximum plane to the next must amount to half a wave-length of the light ray. The first thing which Wiener required was now a monochromatic and chemically active light, and he says, 'The sodium flame could not be used, since this even with a long duration of exposure does not noticeably act on collodio-chloride of silver. On the other hand, the light of an electric arc lamp proved to be approximately homogeneous in a remarkable manner. This is to be attributed to the fact that it emits in special intensity the violet rays which are the most energetic in acting photographically on the collodio-chloride of silver, and the wave-length of these active rays is tolerably closely defined; with this, indeed, the absorption of the ultra-violet rays by the glass plate must still be taken into account.' In order now to photographically fix the alternating quiescent and maximum planes which must be formed before the mirror, Wiener placed a collodio-chloride of silver film, spread upon a plane glass in front of the mirror plane that it had about as minimum a distance on the one side as the other, it must therefore alternately intersect quiescent and maximum planes. It was so thin that its thickness scarcely amounted to one-tenth of the distance of two maximum planes, indeed only about one-thirtieth of the wave-length of the sodium light. Wiener describes the preparation of the collodion film in the following way: 'There is in the market chloride of silver collodion (Schippang and Co., Berlin), in separate solutions, one of which contains only the silver, the other the chloride salts. Small and equal quantities of each are taken and both diluted 15 to 20 times with a mixture of equal parts of alcohol and ether. Then the diluted solutions are mixed together in the dark-room. Of the liquid thus prepared, one places a couple of drops on a plate of glass. The solvent quickly evaporates and leaves behind on the plate a fine film. In order to give this as much as possible an equal thickness throughout, one uses with advantage a little dodge. One takes a second glass plate of about the same size. After one has poured a few drops of the solution on it, one covers the other plate over it, so that the liquid spreads itself out between the two plates by capillary attraction. If the space is completely filled up, the plates are drawn quickly apart, the upper one turned over and laid down horizontal. After evaporation of the solvent there remains on the glass plate almost everywhere an equally thick film. The film is absolutely transparent, has the thickness (in a test case) of 20 tenth metrets, equal to one-thirtieth of the wave length of the sodium light, and in spite of such fineness it possesses a light sensitiveness quite sufficient for the experiment. After an exposure of one to two minutes, the plates were taken apart and developed. There showed then in the negative images on them, where the film had intersected the planes of quiescence, clear stripes; where they had cut through the maxima planes, dark stripes, both in frequently occurring alternation, corresponding to the theory of the stagnant waves."

"It is proved by this that the chemical action is wanting in the points of rest of the stagnant wave system, whilst it takes place vigorously in the maximum points; thus it is to be expected that in the action of a monochromatic ray of light on a silver mirror covered with silver subchloride the silver subchloride would remain unchanged at the points of quiescence, and, on the other hand, that metallic silver would be separated out by the disruption of the elements silver and chlorine. There were thus formed within the dark mass of the silver subchloride films of separated silver particles which stood at a distance from one another, equal to half a wave length of the acting light ray—and this suffices to again well discern in incident white light the same colour which the acting ray had. For it is well known that in white light the same ray is contained which had previously acted: it finds a system of films of bright particles of silver, and the films at a distance of half a wave length from one another. The rays reflecting from the two film points following one after the other have, therefore, always a whole wave length difference of course. They will thus always give the same impulse to the eye, that is to say, such as acts for every particle of the retina at the same moment in the same way. Of such waves one says, that they are in equal phase, that is to say they attain simultaneously the position of rest, the upper and lower turning point of their vibrations and their actions therefore are added together. But what happens to the other rays of white light, whose wave length is greater or smaller than that of the acting rays? For the shorter the difference of path of



the rays reflected from two film points following one after the other must be greater than a wave length; therefore they will not be reflected in corresponding phase; where with the one the vibrations still increase, with the other they descend and *vice versa*. Therefore they will be reciprocally weakened and with a suitable number of reflecting films will be completely quenched. The same takes place for all rays whose wave lengths are greater than the acting ray. For here the difference of path amounts each time to somewhat less than a whole wave length and on account of the difference of phase thus produced must the individual rays also be quenched. The same will occur with all the coloured rays, which are contained in white light, only those will be vigorously seen under whose action the film points were formed. *One will thus see everywhere the identical colour.*

"If the reproduction of any simple colour is explained in this way, it naturally follows of the compound colours; for with these for every constituent colour must a special system of stagnant waves and film points be formed. The compound colour, in which all the rays of the visible spectrum are combined, is *white*. This is also reproduced as white; still only when the ultra violet has not acted with the illuminating colour. If this is the case, there appears the actual colour of the ultra violet which under ordinary circumstances is invisible, the lavender grey, as Helmholtz has called it. If one wishes, therefore, to print in sunlight a coloured transparent painting by laying it on a prepared photochromatic plate, one only obtains the white places as white when one inserts in the course of the solar rays a transparent substance which holds back the ultra violet rays of the solar spectrum. For this purpose is specially suitable a solution of bisulphate of quinine acidulated with a few drops of sulphuric acid; still, uranium plates also appear to act sufficiently energetic. The remaining colours also appear pure only with the use of such a screen, if one wishes to produce them through a transparency in sunlight, whilst this screen, on the other hand, is not requisite for working with the spectrum, since with this the ultra violet rays are widely separated from the visible colours."

Mr. D. G. Gordon, page 183 of our issue of the 13th inst. gives an idea of the method he is working with, and the results he hopes to attain, and we may, perhaps, assist him and other experimenters by drawing attention particularly to the latter part of Dr. Zenker's article on the suppression of the ultra-violet rays, and state that Dr. A. Miethe has recommended for this purpose the following special screens:—

(1)					
Gelatine	..	..	..	..	2 grammes.
Glycerine	..	..	..	..	2 "
Water	..	..	..	..	25 cc.m.
Æsculin	..	..	..	..	0.03 grammes.

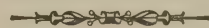
The mixture is dissolved by the aid of a gentle heat, filtered and plates coated with the same, and stood in a place free from dust to dry.

(2)					
Gelatine	..	..	..	..	2 grammes.
Glycerine	..	..	..	..	2 "
Water	..	..	..	..	25 cc.m.
Fluorescein	..	..	..	..	0.02 grammes.

The solution is made as above, and plates coated with the mixture. The coated plates are laid film to film and clipped together at the edges. The addition of glycerine keeps the films somewhat damp, and they therefore retain their special properties longer, and Dr. Eder states that a trace of soda added to the solution of fluorescein also improves this property. The æsculin plate gradually becomes brown in the light, and therefore requires renewing. The cause of Mr. Gordon's failure with the ordinary film is probably due to the ordinary film being a great deal too coarse and opaque, and too thick. There is not the slightest doubt that a silvered copper plate such as the old daguerreotype plate coated with an extremely thin film of collodion or gelatine emulsion would reproduce the colours excellently. The collodion emulsion as indicated by Wiener above might be employed, and Lippmann states that a suitable gelatino-bromide film might be obtained by dissolving 10 grammes of bromide of potassium in 100 cc.m. of water with a little gelatine, flowing this over a glass plate and allowing to set and dry, then dipping it for five minutes into a 20 per cent. solution of nitrate of silver acidulated with acetic acid, then washing and drying. Development might be effected with a developer compounded after Taupenot's formula, for which three solutions are required, viz.,—a 10 per cent. solution of carbonate of ammonia, an 8 per cent. solution of bromide of potash, and a 10 per cent. solution of pyrogallol—7 cc. of the ammonia, 6 drops of bromide, and 6 to 10

drops of the pyro with a suitable quantity of water. After development the plate should be well washed, flooded with solution of salt, and fixed. Becquerel stated (see AMATEUR PHOTOGRAPHER, page 147) that he had noticed the electrical disturbance produced by the action of light; still, this should not prevent Mr. Gordon from doing the same.

With regard to the cost of an apparatus such as figured in our issue of March 6th, it need not be very great; a small electric light may be obtained for 15s., cell for the heat rays absorbent for 1s. 6d., a prism for 8s. 6d., and another cell for the light filter for the same price as before, the only requisite then being a slit to admit a very narrow ray of light, and we have had one made for us by a working optician for 2s. 6d., and every amateur has a lens and camera.



## Our Contemporaries.

The *Photographic Times*, in an article by Adelaide Skeel, says—"A druggist advises me never to buy the oxalate of potash, owing to the difficulty of getting a pure sample, but to make it according to the following recipe, using a large open dish on account of the amazingly great expensiveness of the solution, when, by adding acid to the carbonate, large volumes of carbonic acid are evolved:

Water	..	..	..	..	60 ounces.
Carbonate of potash	..	..	..	..	12 "
Oxalic acid	..	..	..	..	12 "

Dissolve acid and add slowly to potash, making the solution neutral first, and then acid. Supposing, however, that one has a pure sample of oxalate dissolved in the right proportion for platinotype prints, it is only necessary, as said before, to double the amount usually added to the iron for bromides. At first I acidified it with a few drops of acetic acid, but not being able to see any difference in the pictures thus developed, and those developed later, without the addition of the acid, I decided it was not necessary, and this conclusion led me to try the bold experiment of also omitting the acetic acid triple bath when the acid hypo was used as a fixer. Believing that everything which can be left undone should be, I was charmed to see the prints come out free from yellow stains without acidifying it. Of course, it is reasonable to know that hypo with acid in it will clear as well as acid first, and then hypo; but it is satisfying to make sure."

*Anthony's Photographic Bulletin* gives the following method of obtaining brown and reddish tones on bromide prints published by Dr. Stolze. He uses for the first development:

Solution No. 1.					
Sodium sulphite	..	..	..	..	10 parts.
Eikonogen	..	..	..	..	2 "
Distilled water	..	..	..	..	150 "
Solution No. 2.					
Carbonate of potash	..	..	..	..	25 parts.
Distilled water	..	..	..	..	150 "

For normal negatives mix 25 parts of No. 1 with 10 parts of No. 2, and from 75 to 90 parts distilled water. For over-timed negatives more, and for under-timed negatives less of No. 1 is used. The temperature should be about 60 deg. Fah. In full exposures, bromide of potassium should be added—this treatment produces beautiful tones of a slightly yellowish-brown colour, to change which into brown or reddish colour it is necessary to transform the image into bromide of silver, and re-develop as follows:

Solution A.					
Sulphate of copper	..	..	..	..	1 part.
Distilled water	..	..	..	..	100 parts.
Solution B.					
Potassium bromide	..	..	..	..	1 part.
Distilled water	..	..	..	..	100 parts.

These two solutions are mixed and the print bleached therein, after which they are thoroughly washed to eliminate as much as possible the copper, and treated with the eikonogen developer first used, in the following proportion:

Solution No. 1	..	..	..	..	50 parts.
" No. 2	..	..	..	..	20 "
Diluted water	..	..	..	..	4930 "



The prints will undergo all the changes of tone from vivid red chalk to deep violet black, and may be stopped at any desired tone by immersing in a bath of citric acid, 1 to 100 of water, after which they should be washed and dried. The intensity and detail obtainable depend largely on the second development, which brings out much more than is apparent after the first, and the process is therefore highly commended as an intensifying agent, both for bromide and for negatives as well.

*Wilson's Photographic Magazine* gives the following:—"You will in time be puzzled to know how best to keep and classify your rapidly accumulating negatives. I have adopted what I term the envelope plan. I do not know that there is much originality in this with me, but I find it very effective and convenient. For each negative I select a stout envelope, somewhat larger than the negative, and on one side of it I write the name of the subject and all necessary information. This ordinarily might be sufficient, but when there are several negatives of the same subject, it would be often confusing to tell just which was the one wished. I have, therefore, adopted the plan of making a blue print of each negative and pasting it on the other side of the envelope. I am thus enabled at a glance to tell just what the negative is and all about it, without removing it from the envelope. The matter of making the blue prints is a simple one. I take an ordinary drawing-board, cover it with a piece of felt, upon which I place my paper and arrange the negatives on top of that, and simply guess at my exposure. It is well to consider the density of the negatives when arranging them for printing, and print those of uniform density together. Waste silver prints can, of course, be used for the same purpose, if you happen to have any that are not entirely spoiled. The sheets, after printing, are simply cut up and pasted on the envelopes."

The *St. Louis and Canadian Photographer* says—"The best negatives for bromide printing are those full of detail without excessive density or too much clear glass; a slightly over-exposed plate, developed with one-half or two thirds the proper quantity of pyro, and the development stopped the moment all detail is out, is to my mind the proper way of arriving at a perfect negative for bromide printing, and this is what I mean by a 'normal' negative. Such a negative, when exposed for the proper time, will give a perfect bromide print with the normal developer mentioned hereafter, and will require no dodging of the lighting or alteration of the developer in any particular."

## Notes for Novices.

### CHOICE OF PLATES AND DEVELOPER.

THE choice of a dry plate is always more or less an important and anxious subject for a novice. He perhaps is fortunate enough to know some more advanced worker who always uses one particular brand, and this brand is strongly recommended to him and is therefore used at first. Then, perhaps, our novice sees a statement in some journal that some well-known prize-winner has just taken a prize against all comers for a view taken on Messrs. Silver and Bromide's plates. He immediately adopts this brand, and is disgusted to find he can get no better artistic results than before; some plates frill, others fog, and in despair he sets to work to read the advertisements of all the plate makers, and he decides to give each a trial. The moment he does this he's lost; he may, by chance, turn out a fairly decent-looking negative, but it is more by luck than skill. And should he chop and change about with developers for the same reasons, it is utterly impossible for him to turn out a decent negative when he wants to. There are no two plates in the market which require exactly the same treatment, no two developers which require exactly the same modification. Choose one brand of plate, and either use the developer recommended by the makers or else a formula which you know some successful worker of that plate uses with good results; then *stick to your one brand of plate and one formula of developer*, till you have learnt what you can do with the plate and what the developer will do. Then if you like try a change, only try it in the same way—do not think for one moment that you are going to learn what a plate or developer can do from one box.

To choose a plate out of the many commercial brands is no easy task, to state the best plate is an utter impossibility for anyone; they are all good, and more, a great deal more, depends upon the man using the plate than the plate itself. Don't ask

impossibilities, that is to say, don't ask a plate to give you detail and gradation of tone when it is wrongly exposed and wrongly developed. Above all things, *never blame a plate for a fault until you are quite certain the fault is not yours*; and never take your own opinion on this point, send the faulty negatives, with a full statement of how you work, to some practised friend, or to the editor of your weekly journal. There is no bad commercial plate in the market, for the simple reason that the makers now know that their actual existence as such depends on sending out good stuff. Occasionally, but very occasionally, a stray odd dozen may be a bit faulty, but in such a case, that is if you have been convinced that it is not your fault, send the faulty negative and the box to the maker, and ask quietly and civilly as to whether under the circumstances it is their fault or yours. If they tell you that the plates are old and have deteriorated by keeping, then make sure next time you get fresh ones. There is not a plate in the market we have not used, and we have used a great many, and only twice have we ever had to find fault with the actual maker. Once we had a batch of plates which frilled slightly towards the centre, and showed a distinct line within which the frilling took place. On sending these back to the makers they immediately acknowledged that the plates had by some oversight been packed before the centres were absolutely bone dry, and sent us a fresh lot with apologies. The other case was that of three plates out of a dozen, which showed little black specks on the film surrounded by a comparatively clear circle which were due to dust settling on the film whilst wet. In the course of many years these are the only two cases we can call to mind of faults which might actually be ascribed to the maker; and when we meet with a fault which may or may not be ours or the maker's, we prefer to err on the right side and take the blame ourselves. We therefore strongly advise all to do the same, and blame their own stupidity and blundering before blaming other people.

All novices want to be told how to choose a plate. Well, for landscape work, one showing about 15 degs. on Warnerke's sensitometer is the most suitable, and one also containing iodide of silver, which may be known by the deeper colour of the emulsion. The presence of iodide of silver gives far greater latitude in exposure and in development. It is far better to use a slow plate and full aperture of the lens than a rapid plate and small aperture; the result is by no means the same, although precisely the same exposure be given. For instantaneous work we must choose our plates according to the time of year and character of work we are going to do; in the height of summer, for sea and river work, we may use a plate showing only 20 or 22 degs. without ill results, but for inland work where we are likely to meet with heavy masses of foliage or shadows it is advisable to use as rapid a plate as possible. For portraiture a very rapid plate is again desirable, so as to reduce the necessary exposure as much as possible. For line work or copying in black and white a very slow plate should be used, one which shows about 5 degs. Warnerke; special plates called "photo-mechanical" are prepared commercially, which, with care, will give equally good results as wet collodion, which is the process par excellence for giving clear glass lines. For copying oil paintings, coloured objects, and flowers, etc., colour-sensitive plates should be used, and these may also be used for portraiture, with good results, in cases where freckled, or light or auburn haired sitters are to be taken; and in the spring and autumn, too, these plates give superior results in ordinary landscape work, the difference in summer not being so noticeable.

## Thursday Evenings at the Camera Club.

BY ONE OF OUR STAFF.

THE new premises of the Club, or rather a good portion of them are now in usable condition. How delighted the members must be to get away from the old rooms, which, though answering their purpose admirably in the early days of the Club, have lately been found much too narrow for the growing numbers. The general room, in which the papers are read on Thursday evenings is a vast improvement on the old, low-ceiled, badly-ventilated room, which was often found incapable of holding all those who desired to be present. There is a cosy little dining-room, all corners, so that



everybody can get the seat he wants; and a well-stocked, quietly furnished library, in which conversation and smoking are strictly prohibited.

Major Nott took the chair at this the first meeting, and congratulated the members on entering into possession of their new premises. The usual course of procedure was then followed, and Mr. Davison brought to the notice of the meeting a "parallel trimmer," which was an ingenious apparatus to enable one to trim or cut down a print to any size desired.

The Rev. T. Perkins, a well-known and energetic member of the Club, was then called upon to give his paper, which he called "Further Notes on English Church Architecture." The reader made an apology, at commencing, for what he intimated would be the shortcomings of the paper, and explained that he was for some time confined to the house by a bad cold, and the remainder of the time was taken up by another matter which had nothing closer to do with church architecture than that it led to a ceremony interesting to himself, and one other in a modern ecclesiastical structure. There was an audible smile at this, as it was generally known that the reverend gentleman had recently taken on himself the bonds of matrimony. The reader dealt at considerable length with his subject, and devoted himself to what is perhaps the most interesting division—Anglo-Saxon churches—and prefaced his remarks by saying that he agreed very much with Com. C. E. Gladstone, but not on the point that interior work must necessarily be given up at the autumnal equinox, for he had found that snow on the ground was often useful in lighting up a dark roof. Leicestershire and Northamptonshire were rich in Saxon churches, and the geographical distribution of their churches was interesting and instructive. Britain was under the sway of the Romans in the first half of the fourth century, and under Constantine Christianity became the established religion of the empire. When the Romans afterwards abandoned Britain "the fierce heathen of the northern sea" drove Christianity into the west, where it remained till the sixth century, when it was reintroduced from Rome. There were several churches for which claims were made of having been built in the earlier time, and he was inclined to think that the church at Brixworth was built in the early Roman period. It might be that some of the churches for which the claim was made were originally built of wood, in the belief that the end of the world was near, and that when the critical date had passed people began to think it was worth while building of something more substantial, and so in the second period stone churches were built on the site of the wooden structures. There was a great similarity in the style of the existing Saxon churches, and if they were not built about the same time, the same style in architecture must have continued for about 500 years, which it had not done in any other case. The features of Saxon work were long and short work at the corners, the towers were more lofty than the Norman ones, and the buildings were high in proportion to their length and width; there were, as a rule, no aisles. From the days of the early Edwards, architecture was in a state of decay, but it could not be said to be dead until the time of the Stuarts and Hanoverians. Nowadays we saw pretty churches, but they were only bad imitations of an old style, and there was but little chance of going back to early architecture and making a new start from that point. We had plenty of engineers, but few artists; we could build bridges and ironclads, but we could not build a beautiful house. The best thing they could do, if they had reverence for the past, was to raise their voice on behalf of the preservation of these old buildings, and as photographers they might preserve records of the beauty which time, neglect, and ignorant restoration threatened to destroy. Architecture was a most interesting branch of the science, and there was much useful work to be done, and which must either be done at once or never done at all, for the restoring fiend was busily at work either knocking down buildings or scraping and patching them up into smugness more deplorable than their decay. To preserve records of these old buildings united action was necessary. The Camera Club was a body which could do that work admirably, in the way he had pointed out in the *Photographic Quarterly*.

A considerable number of slides were then passed through the lantern, the lecturer commenting upon them as they appeared, but there was not time to show the whole of the series, and, on the motion of the Chairman, the meeting was adjourned till the following Monday, on which day the reader promised to attend and complete the series.

## Exhibitions.

### LIVERPOOL INTERNATIONAL PHOTOGRAPHIES. No. III.

(By Our Special Correspondent.)

ANOTHER week's run has served to show increased interest in the big show at Liverpool. On an average the daily attendance must be nearly 2,000, figures which will be very largely added to during the Easter holidays. For several nights the two demonstration rooms, both being occupied at the same time, have been uncomfortably over-crowded, and even then all the visitors desirous of attending the lectures could not be accommodated. On busy nights three demonstration rooms could be filled. A series of capital musical recitals are being given daily, and are much enjoyed. For next Monday the executive have secured the Rotunda Lecture Hall, a large hall adjoining the Walker Gallery, where it is intended to give two lantern shows, "Iceland" and "Ober-Ammergau." The building will seat over 2,000 people, and there is every probability of it being crowded, as "Iceland" and "Ober-Ammergau" have proved extraordinary attractions. Altogether, the final week should be a record.

### PICTURES (CONTINUED).

Resuming the review of pictures, a very excellent section is found in Class X., 402 to 473, marine and cloud studies, any size, any process, set of four pictures. Thirty contributors make up this class, S. Bourne taking the silver award with 432 to 435, four scenes at Killarney; and Thomas Glazebrook the bronze medal with four cloud pictures, 407 to 410. The "winning eight" are very fine, and the awards have given general satisfaction. H. R. Marsden shows a nice quartette, 419 to 422, and Harry Symonds's yacht-racing studies, 424, are good. Carl Greger's cloud effects, 423, are excellent, but would be considerably improved if a little of the lower part were cut off. In 427 A. W. Gottlieb has a superb four which were nearly successful with the judges. D. Cunningham's 428 to 431 are artistic, and A. F. Stanistreet exhibits fine work in 438. Of 440 to 443, 441 is the best picture by F. D'Arces. H. Dudley Arnott's 451 to 454 are very fair. J. L. Mackrell has four lovely boat studies at Hoylake, 468. Manuel de Soto, Vice-Consulate d'Espagne, Zurich, is represented with sea and cloud studies, 444, nicely done. Miss Rose Collier's frame, 439, is exceedingly creditable.

In Class XI., 475 to 497—animals, from life, any size, any process, set of four pictures—there are thirteen exhibitors. F. M. Sutcliffe shows good work in 475 to 478, 477 being perhaps the best study. Charles Reid, the well-known worker in this branch, takes the silver medal with 485, "Highland Cattle, Ewes and Lambs, Fox Hounds, Mares and Foals." Each of this four is clever and exceedingly well finished. H. Herbert, 486 to 489, shows his best picture in 486, and D. Hedges and Son in 496a of 496a to 497. These latter frames are more than average in quality. J. Catto, of Australia, has fair pictures in 490 to 493.

Class XII., 498 to 517—groups, outdoor, any size, any process, set of four pictures is a small one—made up by eight exhibitors. Lyd Sawyer's "Near the Big Crane" (499) is good, but F. M. Sutcliffe deservedly gets a silver medal for 503 to 506, the two numbers mentioned being the pick of the four. No. 507, by Gaston Plessy (a youth under twenty years of age, it is stated), contains four really excellent subjects, well chosen and well executed. They are "Baby's Pap," "Women and the Secret" (La Fontaine's fable), "A Game of Cards," "The Big Brother's Birthday." F. Bremner is awarded the bronze medal for 508, group studies (instantaneous). Werner and Son (Alfred Werner) contribute aristocratic groups in 514 to 517. Young Plessy hails from Loiret, France.

A larger class and one in which there is much very fine work is Class XIII., 518 to 580c, architectural, interior or exterior; whole-plate and over; any process; set of four pictures. Twenty-one exhibitors compete, the bronze medal being awarded to C. Court Cole for 565 to 568. These embrace (1) "Christ Church Cathedral," date 1160 to 1180, showing Tudor vaulting, 1600; (2) "Divinity Chapel," 13th and 14th centuries, showing watching chamber of the saint Frideswide, 15th century, and old pulpit seat of Regius Professor of Divinity, and sometimes seat of Vice-Chancellor of the University; to the left, old carved coat-of-arms; (3) "Wolseley's Library, Queen's," date 1692 to 1694;



(4) Reredos, All Soul's, 15th century, restored by the late Sir Gilbert Scott, R.A. They are excellent work all through. George Bankart shows very good studies indeed in 530 to 533, as does Richard Keene in 547 to 550 (interiors of Osmaston Manor, the seat of Sir Andrew Barkeley Walker, Bart.); James Pinnington, in 551; Cyril S. Cobb, in 552 to 555; and George E. Thompson, in 560. There are several foreign exhibitors in this class.

Class XIV., 581 to 589—architectural, interior or exterior; 8 by 5 in. and under; any process; set of four pictures—contains studies by nine workers, George E. Thompson getting the award for 589, a splendid frame showing (1) "Treves Cathedral Porch;" (2) "Pont Auderner;" (3) "St. Castor, Coblenz;" and (4) "Perseus, Florence." Other excellent pictures are shown in 583, Cecil V. Shadbolt; and 587, W. H. Rock. As a whole there are about 300 pictures in the architectural section.

Coming to the scientific department, Class XV., 590 to 611, for photo-micrographs, astronomical, geological, and botanical work etc., a few unique studies are displayed. R. Paulussen (Vienna) gets the silver medal with 607, twelve frames heliogravure process. These are a splendid set. Cecil V. Shadbolt with 605, views taken from a balloon at various altitudes, one showing another in cloudland 3,000 ft. above the earth, takes the bronze medal. Chas. Scolik (Vienna) in 592 exhibits photo effects of different coloured objects, and portraits in costume and their respective tones and values. The same exhibitor in 592a shows four good frames, heliogravure. Manuel de Soto's high mountain views, 606, are excellent, as also are Count Robert Ritter von Stockert's (Vienna) flower studies 602 and 603, and Greenwood Pim's "Pages from the Book of Kells," 608 to 611.

Of the flash-light pictures, chiefly 612 to 634, those of the Countess Loredana da Porto Bonin, the Italian gold medallist, are unquestionably the finest and worth a visit themselves. They range from 623 to 634, and are titled as follows:—"Tossing for Drinks," "The Cobbler," "The Village School," "Politics," "The Future Professor," "The Country Kitchen," "A Stolen Kiss," "Gamblers," "Old Memories," "Training for the Choir," "The Corn, a Sore Spot," and "The Catechism."

"Here," said a judge, examining this superb dozen, "is the work of the Robinson of Italy."

Other notable studies in the same section are 612, by John Pasquali von Campostellato, some of which are taken inside Alpen huts; 614 and 616 of F. Downer's 614 to 617, "Professor Herkomer's Filippo;" and 618 to 621, by Albert Smith. The six pictures in frame No. 612 are exceptionally good in every way.

Shapoor N. Bhedwar takes the silver medal in Class XVI, 645 to 679, for a groups or figure studies to form the principal element of the picture; any size or process; one study only. The successful exhibit is one of much softness and brilliancy, called "Two's Company," and showing a lady figure in Eastern costume with what is presumably a pet bird.

However, there are several other very able pictures in the class, among which may be enumerated 649, "Lady Reading a Letter," by Joseph Chmielewski; 650, by W. J. Anckorn; 652, "Pleasant Pastimes," by Chas. A. Timmins; 664, "Mending Nets, Whitby," F. d'Arce; 666, "The Solo," by John E. Dumont; 671, "Flirtation," by H. McMichael; 672, W. J. Byrne; and 677, "The Good News," by Countess Loredana. Mrs. Jamie W. Hignett, 659, and Miss Lil W. Tomkinson, 675, also show good pictures; the former "He Cometh Not," and the latter "The Little Old Woman who had so many Children she didn't Know what to do."

Forty exhibitors competed in Class XVII, 680 to 720, enlargements; print to be untouched; any subject, size, or process; one study only. Chas. W. Huson gets the bronze medal with 685, "Early Morning," a very fine picture. W. Crooke also gets a similar award for 696, "Portrait of a Lady," another bit of good work. Among other prominent studies are 683, "Eventide," by Fred Anyon; 681, "Crucis Abbey, Berwyn," E. S. Gladstone; 690, "Young Girl Reading," Joseph Chmielewski; 692, "Portrait of Child," Clarence James; 694, "Making Crabpots," John Noakes; 695, "Watering the Horses," John Morrison, junr.; 698, "Tanyralt," G. A. Kenyon; 699, "Yachts Racing on Lake Windermere," H. Herbert; 709, "Tired Playmates," Edward A. Gollidge; 713, "Chain Bridge, Berwyn," Francis H. Glazebrook; and 716, "A Gnarled Oak," W. Tomkinson.

Two novel pictures are 684, by Gaston Plessy, and 686, by Albert Chancellor. Plessy shows "A Spider on its Web" (taken by magnesium flash-light and enlarged on Eastman paper), and Chancellor exhibits studies of "Captain Spencer with Balloon

and Parachute," balloon 70 ft. high, parachute, 2,000 ft. high.

"A Glimpse of Old Norwich," 708, by H. Dudley Arnott, is very fine.

#### APPARATUS (FIRST NOTICE).

Space this week will not allow of an extensive notice of the apparatus in the exhibition, and it will be dealt with in a subsequent issue of the AMATEUR PHOTOGRAPHER.

Altogether about twenty firms are included in the Trade Exhibitors, viz.:—Fry Manufacturing Co., London; Robinson and Thompson, Liverpool; A. and G. Taylor, Liverpool; Medrington's, Limited, Liverpool; Hannan and McIlveen, Gainsborough; Hauser Y. Meret, Madrid; William Hume, Edinburgh; Alfred Watkins, Hereford; James Thomson; J. J. Atkinson, Liverpool; James Wood, Liverpool; Birmingham Photographic Co., Limited; Wood Bros., London, Melbourne, Sydney and Liverpool; Archer and Sons, Liverpool; Sharp and Hitchmough, Liverpool; Alexander Watt; Wood (late Abraham), Liverpool; and T. Miller, Salford, Manchester.

## The Proposed Federation Scheme.

THE adjourned meeting convened by Mr. L. M. Biden was held at the rooms of the P. S. G. B. on Monday evening, the 23rd inst., at eight o'clock, Mr. Biden in the chair. Representatives were present from the Toynbee Camera Club, Harlesden and Willesden Photographic Society, Holborn Camera Club, North London Photographic Society, Sydenham Camera Club, Ealing Photographic Society, West London Society, North Middlesex Society, the People's Palace Photographic Club, and other societies, including Messrs. Bedford, Warnerke, and Addenbrooke, of the P. S. G. B.

The Chairman opened the meeting by announcing that he had received several letters on the subject of the advisability of federation, about a dozen societies being in favour of it, whilst other societies seemed to object unless the P. S. G. B. were at the head. Mr. Warnerke stated that he and his colleagues were appointed by the Council of the P. S. G. B. to report on the question only, but did not propose to take part in any way in the proceedings as representatives of that society.

Mr. Brocas (Holborn) said that he thought when the matter was brought forward last meeting that it was to take the form of a union to look after the interests of photographers in general, but he found it was an amalgamation of societies. The weak point about the matter appeared to him that there being a large number of earnest workers who were not bound to any society, provision should be made for their membership, his idea being that it would be better for individual members to form the union, and thus give the societies the option of sending more members in at a reduced fee.

The Chairman replied that the federation did not intend to accept individuals as members, or enter into competition with any societies.

Mr. Malby (Toynbee) spoke as to the necessity of combination of some sort, and thought it time that photographers (both amateur and professional) should accept the run of events and combine together for the better opportunity of securing for the societies united action, and thought that if such a union was formed, it would conduce greatly to the future welfare of the whole art of photography.

Mr. Addenbrooke said the Council of the P. S. G. B. was of opinion that the Society ought not to stir in the matter until an outside opinion had been expressed in favour of federation. They had now received requests from abroad; these came before the Council at the same time as Mr. Biden's communication, and Sir H. Trueman Wood, Mr. Warnerke, and himself were appointed a Committee to consider the matter. They were considering the Belgian scheme of amalgamation, the scheme under which the natural history societies were affiliated to the British Association, and other schemes; but it would take some time before they could report, and months would probably elapse before any action could be taken thereon.

Mr. Bedford spoke as to the necessity of federation, and was pleased that the matter had come forward. The only consideration before him was whether it was desirable to hurry the matter through while it was understood that the P. S. G. B.



was considering the matter. Would not the societies get more advantages if they came in under the scheme of the P. S. G. B.?

Mr. Brown (N. London) was in favour of federation, but would like before his Society was pledged to have a definite reply to the question, "Will the P. S. G. B. join the federation, or will it not?"

Mr. Warnerke said that after the Committee's report to the Council they would give a positive answer.

Mr. Mackie (N. London) said his Society were like the West London.

After various other gentlemen had given their views, the Chairman put the following resolution which had been proposed and seconded:—

"That it is desirable to form an association or federation of societies and clubs whose members are interested in photography,"

which was carried without dissent.

After considerable desultory conversation the draft constitution prepared by Mr. Biden was read. It was moved by Mr. Malby:

"That a Committee be appointed for the purpose of formulating a scheme and considering rules,"

which was carried.

The Committee were then elected as follows:—

Mr. Barrett (People's Palace), Mr. Biden (Toynbee), Mr. Brocas (Holborn), Mr. Cherry (North Middlesex), Mr. Edwards (South London), Mr. Rumble (Sydenham), Mr. White (Ealing). Mr. White (Ealing) moved:

"That the meeting be adjourned *sine die* until called together by the Committee to receive the report of the Committee."

Carried.

Votes of thanks to the Chairman and to the P. S. G. B. for use of room were proposed and carried unanimously.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Brixton and Clapham.**—The second annual meeting was held on the 19th inst., when a very satisfactory report and balance-sheet were presented. The officers for the ensuing year were elected as follows: President, A. R. Dresser, Esq.; Vice-President, J. Reynolds, Esq., M.D., F.R.G.S.; Committee, Messrs. T. J. Bartrop, W. Bevins, J. W. Coade, M. O. Forster, F. W. Maile, and F. W. Kent; Curator, Mr. W. H. Powell; Recorder, Mr. R. Kidson. The occasion was thought to be an appropriate one for presenting to the Secretary a whole-plate camera, etc., subscribed for by the members as a mark of their appreciation of his services. The next meeting will be held at Gresham Hall, Brixton, on April 9th, when Mr. Bevins will read a paper on "Light," with lantern experiments. Those desirous of joining should communicate with the Hon. Secretary, Fred. W. Levett, 126, Lowden Road, Herne Hill, S.E.

**Colchester.**—An instructive lecture on "Shooting Stars, Meteors, and Comets" was given on the 16th inst., at the Public Hall by the Rev. E. Ledger, Gresham Professor of Astronomy. The lecture was in connection with the Colchester Camera and Sketching Club, whose President, the Rev. C. L. Acland, occupied the chair. In the course of his address, the lecturer gave many interesting details regarding meteoric bodies, of which, he observed, about 700 fell on the earth's surface in the course of a year. With regard to shooting stars, he pointed out that twenty millions of these entered the earth's atmosphere every twenty-four hours. He also explained the effects produced by the dust of meteorites, and showed corpuscles of magnetic iron collected from the snow of Mont Blanc, and from the towers of Notre Dame, etc. Here and there, said the lecturer, swarms of meteorites were found side by side in parallel lines, and special swarms of these were met with on certain definite days. He described the "great November swarm" and the swarm of the 10th August, and remarked that the head or nucleus of a comet was believed to be really a group of meteorites moving together through space. He concluded by explaining the theories of astronomers as to the future of the solar system.

**Cornish.**—A meeting was held on the 13th inst. The "Seascape and River Scenery" Competition prints, lent by the Editor of the AMATEUR PHOTOGRAPHER, were on view, and were admired by a large audience, amongst whom were several well-known artists.

After inspecting the prints, a number of slides were thrown on the screen, which had been loaned from a contemporary.

**Croydon Micro.**—The 20th inst. was a lantern night, Mr. Edward Lovett (President) in the chair, when 200 slides were put through the lantern, the work of members, viz., Messrs. J. H. Baldock, A. H. Allen (some fine animal studies), Mr. Coldwells, J. A. Carter, Marriott, C. F. Oakley, W. Goode, A. W. Hurst, A. S. Wild, and W. Low-Sarjeant. Messrs. J. A. Carter and Marriott showed some fine slides of the recent severe snowfall, and Mr. Oakley also put on the screen, worthy of special notice, some photo-micrographs of rock-sections taken by polarised light. The next ordinary meeting will take place in the old School of Art room, on April 3rd, when Mr. A. R. Dresser has kindly undertaken to read a paper entitled "The After-Part of Hand Camera Negatives" (illustrated).

**Enfield.**—The ordinary meeting was held on the 18th inst., and in the absence, through illness, of Mr. R. B. Lodge, who was to have given a demonstration on platinotype, the gap was kindly filled by Dr. F. Cresswell, who showed the capabilities of the rival process of "Kallitype" to a large and appreciative number of members. The demonstration, which was a very exhaustive one, some dozens of prints being developed, was preceded by a full explanation of the principles on which Kallitype is based, and it was evident that the demonstrator not only had his subject thoroughly at his fingers' ends, but had been at considerable trouble in giving the club the benefit of his knowledge at a notice of only three days. Mr. Otto Scholzig sent samples of Dr. Jacoby's chloride of silver emulsion paper for distribution. Previous to Dr. Cresswell's demonstration, four new members were elected, and it was resolved that two delegates from the club should attend the adjourned meeting of the proposed federation on the 23rd inst.

**Harlesden and Willesden.**—At the last meeting of this Society on the 10th inst., the President (J. Naylor) gave a practical demonstration upon "Transparencies and Lantern Slide Making."

**Hastings.**—The March meeting took place on the 16th inst., at the Brassey Institute. Mr. H. F. Bultz, instead of giving his address on "Realistic Photography," as announced, changed the programme to a "Demonstration on Flash-light Photography," thinking the latter would be more interesting. He secured an excellent and fully-exposed negative of the Chairman (Mr. Newton Gardner) and the Hon. Secretary, developing the plate before the members. Mr. Weir Browne, a visitor from the Croydon Microscopical Society, described a process for obtaining warm tones on bromide prints and enlargements.

**Holborn.**—A very successful gathering was held on the 20th inst., when the American loan set of lantern slides were thrown on the screen. About fifty members and friends were present, and all seemed to enjoy the treat provided for them, then followed the prize slides in the lantern slide competition. After several members had had a few passed through the lantern, the whole company adjourned to the room (which had been kindly placed at the disposal of the Committee by Mr. W. Smeed), where the prizes were displayed. Mr. S. T. Chang, in the unavoidable absence of the President, distributed the prizes to the successful competitors. "For the most numerous and meritorious set of picture"—1st prize, a very artistic statuette of an ancient warrior, won by Mr. Fred. Brocas; 2nd, a Thornton-Pickard shutter, won by Miss Lucy Hare; 3rd, a Watkins exposure meter, won by Mr. Golding. "For the six best quarter-plate pictures"—1st prize, a hand-bag, won by Mr. Osborne; 2nd, a pneumatic shutter, won by Mr. Phillips. "For the best enlargement"—A print washer, won by Mr. Smith. "Ladies' prize"—A Thornton-Pickard shutter, won by Mrs. Smith. "Lantern slides"—3rd prize, a photographic album, won by Mr. Bayston; 2nd, a Gladstone bag, won by Mr. Beckford; 1st, an Optimus lantern, with five-inch condensers, won by Mr. S. T. Chang. This gentleman, in a very neat speech, presented his prize to the Club, remarking that his idea in entering the competition was only to benefit the Holborn Camera Club. Mr. Brocas, in accepting on behalf of the Club, the lantern, said that the members were determined that Mr. Chang should not go away empty-handed, and they had combined and bought a small morocco letter case, which he hoped that Mr. Chang would accept, and that he would always remember, whether he was here or in China, the Holborn Camera Club. Several members contributed to the further enjoyment of those present, by some songs and recitations, and all finished up by singing "Auld Lang Syne."

**Leeds.**—On the 16th inst. Mr. Godfrey Bingley, the President, gave the third of the series of elementary lectures, his subject being "Albumen and Aristotype Printing." Mr. T. W. Thornton, Vice-President, occupied the chair. Mr. Bingley said that printing and toning, although simple photographic operations, often proved difficult to beginners. A good print could, of course, only be obtained from a good negative; weak and thin negatives were often the cause of bad prints. The best light in which to print was bright diffused light. Speaking of albumen printing, Mr. Bingley said that if purple tones were required, the washing previous to toning should not be as thorough as for sepia tones. With respect to the toning bath, per-



haps that known as the "borax" bath was best for a beginner; it should be used soon after being made, and it was best to prepare a fresh bath for each batch of prints. The slower prints toned, the better the tone; and the more gold taken up by the print, the greater the chance of permanency; over-toned prints were flat and slatey in colour. The fixing solution should consist of hyposulphite of soda, 3 oz. to the pint of water, and at least ten minutes should be given in the fixing bath. Blistering, which sometimes took place, could be prevented by adding 1 drm. of ammonia or 1 oz. of methylated alcohol to each pint of fixing bath. In speaking of aristotype or gelatino-chloride paper for printing, Mr. Bingley observed that this paper keeps better than albumenised paper; it is somewhat higher in price, but the results are finer. Printing is done in the ordinary way, the action of the light being carried on until the shadows assume a bronzed appearance; after printing, only a few minutes' washing is required, after which the print may be placed in the toning solution. The toning bath giving the best results is composed as follows:—

Sulphocyanide of ammonium	...	...	...	3 drm.
Hypsulphite of soda	...	...	...	7 gr.
Water	...	...	...	20 oz.

To 3 oz. of the above solution add 3 oz. of water containing 2 gr. of chloride of gold, and when clear make up to 8 oz. with water; this will tone one sheet of paper. The prints tone quickly, and when a rich purple has been reached they should they should be removed at once to the fixing bath, consisting of hyposulphite of soda 2 oz. to the pint, and allowed to remain ten minutes or until the print is an even colour; on no account must the fixing solution touch an un-toned print. After toning, the prints are washed for three or four hours, care being taken not to crease them in washing. They may then be dried in the ordinary way, or in contact with glass, according to the surface it is desired to give to the print. Mr. Bingley handed round a large number of prints illustrating the processes with which he had been dealing.

**Lewisham.**—On the 20th inst., Mr. E. Eastwood in the chair, Mr. Charles W. Hastings showed the AMATEUR PHOTOGRAPHER 1890 Prize Slides to a large and enthusiastic audience. The pictures were for the most part of the very highest order, and were much admired, and Mr. Hastings' admirable description added greatly to the enjoyment of the evening. The next meeting, which was by requisition made special and general, will be held on April 3rd, when the annual election of officers takes place.

**North London.**—The annual exhibition of members' pictures and display of lantern slides took place on the 17th inst., the meeting being held in the large Wellington Hall, which had been tastefully arranged by a small sub-committee, and a large number of the friends of the members attended by invitation ticket. There was not such a large display of exhibits as had been shown in previous years, owing to the fact that many of the members were exhibiting elsewhere, but many of the pictures shown had been very carefully prepared. The pictures were of all sizes, from the quarter-plate hand-camera pictures up to very large size, and handsomely framed enlargements, and the various printing processes were well illustrated, showing how any process if carefully handled lends itself to picture-making. Mr. Grover presided at the lantern, and the pictures were projected on to a screen kindly lent and erected by Mr. Bishop. There were two exhibitions of slides during the evening, and these had been carefully selected by the sub-committee. It is hoped that there will be a full attendance at the meeting on April 7th, as Mr. A. P. Wire, the Hon. Librarian of the Essex Field Club, will then give his popular lecture on "Visions of the Past," historical incidents connected with East London and South-West Essex, illustrated by views shown by the optical lantern, many being copies of old prints.

**Richmond.**—On Friday the 20th inst., there was a good muster to discuss "Development and Developers." Mr. Ennis presided. The subject was very ably introduced by Mr. Ardaseer, who touched upon the theory of the action of light upon the sensitive surface and of the development of the latent image, noticed the different action in the development of wet and dry plates, explained the functions of the different ingredients employed, and enlarged upon the advantages of slow development, of re-development in certain cases, and of the judicious use of certain dodges, such as the use of the brush, intentional fogging and intentional staining, and others. Mr. Cembrano mentioned that he had used with advantage in cases of under-exposure, re-development with hydroquinone after eikonogen, the latter giving detail, the former density. Other members continued the discussion, which proved interesting throughout.

**Sheffield (Optical Lantern).**—The monthly meeting was held on the 19th inst., under the presidency of Mr. H. Staniforth. Mr. P. Slater gave a demonstration on the development of negatives, which was highly appreciated by the members. Messrs. Stephenson, Frith, and Stephens were elected a sub-committee to make arrangements for the summer excursions. Dr. Manton promised to read a paper on the "Carbon Process" at the April meeting.

**Southport.**—At the meeting on the 11th inst., Mr. George R.

Cartmel, Secretary, gave a very successful demonstration on "Bromide Printing." The 18th inst. was a "Lantern Night." Upwards of 150 slides, mostly made by members, were shown. "Snow and Hoar Frost Scenes," by Mr. Dunmore (President), and "Portraits of Children," by Mr. Parkes, were much admired. Some comic slides by Mr. Cartmel were the cause of much merriment.

**South London.**—On the 20th inst. Mr. Gambier Bolton, F.Z.S., gave his promised lecture on "Zoological Photography," and although the night was somewhat stormy, over 200 members and friends were present. Needless to say, the slides were perfect, the peculiarities of each animal being capitally brought out. The lecture, which was interspersed with a number of interesting facts connected with the animals, was most entertaining, and although 100 slides were passed through the lantern, the audience, like *Oliver Twist*, craved for more. There were frequent bursts of applause throughout the evening, and the lecturer was most heartily received.

**Spenn Valley.**—The March meeting of this society was held on the 10th inst., at the Coffee Tavern, Dr. Farrow (President) in the chair. There was a moderate assemblage of members, and Mr. Eli Hirst read a paper on "Enlarging Processes," which was followed by an interesting discussion, not confined simply to the subject of the paper, but dealing with M. Lippmann's so-called "discovery" of photography in colours, and other matters.

**Sydenham.**—A meeting was held on the 17th inst., the President, Mr. C. D. Budd, in the chair. After the general business was disposed of, Mr. T. W. Rumble read a paper on "Developers and Developing," in which the advantages and disadvantages of pyro, quinone, and eikonogen respectively, were compared in the fullest and most comprehensive manner, and the balance ultimately struck in favour of pyro. Mr. Rumble closed his remarks by addressing himself especially to those members not far advanced in photography, and, after warning them against running from one system to another, strongly advised them to thoroughly master one developer before attempting another. At the end of the paper questions were asked and answered, and a general discussion followed, in which most of the members took part.

**Sutton.**—At the meeting on the 3rd inst. (Mr. De Clyford in the chair), after the ordinary business was disposed of, a pleasant hour was spent inspecting the box of Monthly Competition prints lent by the Editor of the AMATEUR PHOTOGRAPHER, consisting of "Genre and Figure Studies." The competition subjects for the summer session were arranged, and will consist principally of Surrey views, a prize to be awarded at the termination of six months, from April to September inclusive.

**Wakefield.**—On the 20th inst. there was a meeting of amateurs at the City Chambers, Wood Street, convened by Mr. G. F. Firth, of Oak Leigh, to consider the desirability of forming a society for the district. It was resolved to form the Wakefield and District Photographic Society. The subscription was fixed at 7s. 6d. for adults and 5s. for youths, and a provisional committee appointed. Messrs. G. F. Firth and Halliwell were appointed joint Hon. Secretaries.

**West London.**—On the 20th inst., the President (Mr. W. A. Brown) in the chair, letters and papers from Mr. Biden on the subject of the federation scheme were read, and remarks made by the President, followed by a long discussion, after which it was resolved to send delegates to the meeting on the 23rd inst. with discretionary powers. Mr. C. Whiting then read his paper, repeated by special desire, on "Lantern-Slide making by the Wet Collodion Process." The paper was followed by a practical demonstration, one exposure being made in the camera, and two by contact. The processes of coating the plates, sensitising, exposure, development, intensification, fixing, and toning were watched with great interest by a large number of members, and numerous questions were put to and answered by Mr. Whiting, who afterwards explained the method of printing in clouds. A very hearty vote of thanks was accorded to the lecturer. The President then, in the name of the Society, presented the late Hon. Sec., Mr. John A. Hodges, with a lens (by Taylor and Hobson, with Iris diaphragm) with a suitable inscription. He made a few flattering remarks on Mr. Hodges' past services to the Society, and Mr. Hodges warmly thanked the Society for the testimonial. After a few remarks from the new Secretary the proceedings terminated.

**West Surrey.**—The usual fortnightly meeting was held on the 18th inst. Mr. Geo. Davison (Vice-President), occupied the chair, about fifty-five members being present. Messrs. W. M. Chinnery and Percy M. Thornton consented to become patrons. After the ordinary business had been got through, Mr. Gale, the President, read an exceedingly interesting paper upon the effects of the different seasons from a photographic point of view, illustrating his remarks by an exhibition of transparencies, all made by the wet collodion process, some as long ago as twenty to twenty-five years, including some of the very best of Mr. Gale's work. The next meeting will be held on Wednesday, April 1st, at 8 30 p.m. Visitors are invited.

**Wigan.**—A meeting of this Society was held on the 19th inst., when the AMATEUR PHOTOGRAPHER 1890 Prize Lantern-slides were



exhibited. Mr. J. Hodgson, one of the members, provided a splendid light, working the ether saturator of his own design and construction, which showed the slides to perfection. Several slides elicited applause from the members and friends present, the architecture coming in for the largest share, and taken as a whole they were voted a very fine set. Messrs. J. Hinchcliffe and W. Garnett were elected members, and Messrs. Lamont and H. O. Timmins were proposed. The Hon. Sec. distributed samples of Scholzig's matt-surface and albumenised papers, and Jacoby's chloride of silver, and platina papers kindly sent by Mr. Otto Scholzig.

## Quarterly Examinations in Photography.

**Question 25.** (The best results were obtained by "Sunesis" and "Developoid.")

**Question 26.**—What are the arguments for and against the adoption of the metric system of weights and measures?

**ANSWER.**—Arguments for the Metric System.—(1) A simple, definite arrangement exists between its units of length, weight, and capacity.

(2) The multiples and submultiples of these units are extremely simple, being based on a decimal system, the multiples being unit multiplied by 10, 100, or 1,000, and the submultiples being divided by the same figures.

(3) The names of the multiples and submultiples are very easy to remember, the multiples being the name of the unit prefixed by deca, hecto, or kilo, whilst the submultiples take the Latin prefixes deci, centi, and milli.

(4) Being based on the decimal system, the reduction of one weight or measure into other weights or measures is very simple, all that is necessary being to move the decimal point to the right or left, according as submultiples or multiples of the originals are required.

(5) The multiples and submultiples of the unit of length have a simple definite relationship to the multiples and submultiples of the units of weight and capacity, and vice versa.

In English system an ounce of water at 62 deg. F. equals one ounce of fluid measure, but one ounce of water by weight equals 437½ grains, whilst the division of the same amount of water into minims divides it into 480 parts, therefore no simple relationship exists between the grain and the minim, the former equalling 1·097 minims.

**Disadvantages of the Metric System.** The only disadvantage of this system is that it requires a thorough knowledge of decimal fractions, probably a better knowledge than most grown-up amateurs possess.

Division of decimals is particularly "catchy," and consequently leads to many mistakes in converting one system into the other. Another seeming argument against it is that to English people it necessitates knowing two essentially different tables of weights and measures.

**Question 27.**—Give the formulæ for conversion of metric weights into English weights, and vice versa; and what is the recommendation of the Photographic Convention as to the bulk of stock solution formulæ and their strength?

**ANSWER.**—To convert metric into English weights, first reduce to grammes and multiply by 15·432, and the product will be in grains.

To convert English weights into metric weights, first reduce to grains, and then divide by 15·432, when the quotient will be in grammes.

**Recommendations of Photographic Convention.**—(1) Formulæ should be in (1) grammes and cubic centimetres, (2) grains and fluid grains, (3) ounces and fluid ounces.

(2) Standard temperatures should be 15 deg. Cent.

(3) Formulæ should show proportions of constituents in a certain volume of a finished solution, and not so much by weight in so much measure of the solvent.

(4) Formulæ should distinctly state whether the amount of solvent is by measure or by weight, especially if the solvent be any other than water.

(5) Formulæ should make up to 10, 100, or 1,000 parts.

(6) If separate solutions have to be mixed just before use (as a developer), their strength should be so regulated that their proportions may be as simple as possible, say 1 to 2, 1 to 3, etc.

(7) In using "metric system" formulæ never use the contracted "gram," as it may be read for "grain." Always employ the full French word "gramme."

LINDUM.

**A Good Cold Varnish** may be made by dissolving—

Pyroxylin	...	...	...	...	3 grammes.
In acetate of amyl	...	...	...	...	100 cc.

This requires about 12 to 24 hours to completely dry.

## Apparatus.

### LENS MANUFACTURE AT LEICESTER.

THE WORKS OF MESSRS. TAYLOR, TAYLOR, AND HOBSON.

FOUR years ago we devoted some space in the columns of the AMATEUR PHOTOGRAPHER to giving a notice on the method of manufacturing lenses at the works of the Messrs. Taylor; since that time the business has grown enormously, and Taylor's lenses are known all over the world. Having had the privilege of inspecting the firm's extensive works at Leicester we will make an effort to describe for the benefit of our readers what we saw; but we cannot, in the limited space at our disposal, do justice to the description of each process that the lens passes through, which was so courteously accorded us by Mr. W. Taylor, during our visit of inspection.

The works in Slate Street are near the railway station, and consist of a very substantial three-storey building. The ground floor is arranged as foundry, smith's shop, fitting shop, etc.; much of the work done on this floor is for special tools and machines, a speciality of the firm being an engraving machine now extensively used for all kinds of engraving work, and by the firm for engraving lenses, diaphragms, etc. Anyone interested in mechanics would find occupation and instruction in these shops alone for days. Here the master screw tools are made and dividing machines, also the lathe tools in use in the firm's own shops, as well as many machines for the manufacture of scientific apparatus.

On the first floor are extensive and well-lighted offices, show-rooms, and stock rooms. It may be well at once to describe a few of the lenses and other apparatus turned out by the firm. In the first place we should state that ever since Messrs. Taylor started in business they "set their face as a flint" to the perfecting of standard screws, and have now a system unequalled and by which they can ensure interchangeability of any of their lenses.

In fig. 1 we have a double combination R.R. lens with iris diaphragm; the screws of these lenses are so cut that the  $f$  value of the diaphragm is always seen on the same side of the lens. The angle of view of this lens is from 40 to 50 deg., and the full working aperture  $f/8$ . Fig. 2 is a wide angle rectilinear lens, double combination, which include an angle of from 75 to 80 degrees; they are fitted with rotating Waterhouse diaphragm. The full working aperture is  $f/16$ . In fig. 3 we show a rapid-view lens, single combination, which the makers say, "are

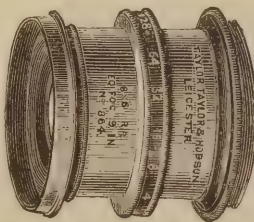


FIG. 1.

of the form now universally recognised as the best for landscape work; for having few surfaces to reflect stray light, the images formed are in this respect more perfect than those formed by double combination lenses." The angle of view is about 40 deg., the lens is fitted with Iris diaphragm, and the full working aperture is  $f/11\cdot3$ . Although not recommended, lenses of this series are supplied with full aperture  $f/8$ . A lens of this class to cover 6½ by 4½ with iris diaphragm is supplied for £1 18s.

Other lenses made by the firm are, wide-angle rectilinear, wide-angle view, rapid portrait, full working

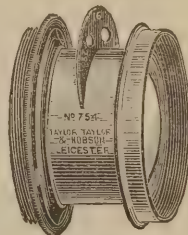


FIG. 2.

aperture  $f/8$ , and lenses for detective or fixed focus cameras. Fig. 4 shows the detective lens, double combination No. 1, 4 in. focus, covering 3½ by 3½, and No. 2, 5 in. focus, covering 4½ by 3½, work at  $f/5\cdot6$ , and are well known as being first-class lenses for hand-camera work. Fig. 5 shows us Shew's patent shutter working between the combinations, having variable speed.

Messrs. Taylors have paid much attention to lantern objectives. It will be remembered that those used last year at the Crystal Palace were supplied by them. They are able to cover a



FIG. 3.



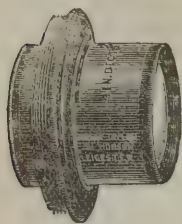


FIG. 4.

in Messrs. Taylor's list. In sundries we have a capital hooded finder, focussing magnifiers, levels, standard screw adapters, etc., all made to do their work perfectly.

Recently Messrs. Taylor have taken up the sole English agency for the goods of the Blair Camera Company of Boston, U.S.A. We had the opportunity of inspecting the goods, and give an illustration (fig. 7) of the Blair Compact camera, which is well made, is "erected by two motions," has "ample swing," "extends to twice its focus," "back frame reverses," and it is set upon a "neat turntable." With the camera are sent out Featherweight double plate or film holders. These are worth seeing, and so is the Hawkeye hand-camera.

Having briefly referred to the goods manufactured by Messrs. Taylor, we will pass into the works themselves. In a large well-lighted shop we find lenses in various stages of completion and finish. We are first shown the rough glass in slabs, which is supplied, alike to almost all lens makers, by Messrs. Chance, of Birmingham. These slabs are cut with a diamond and roughed up. They then go through the hands of experienced workmen,

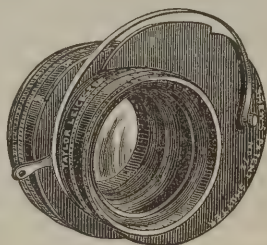


FIG. 5.

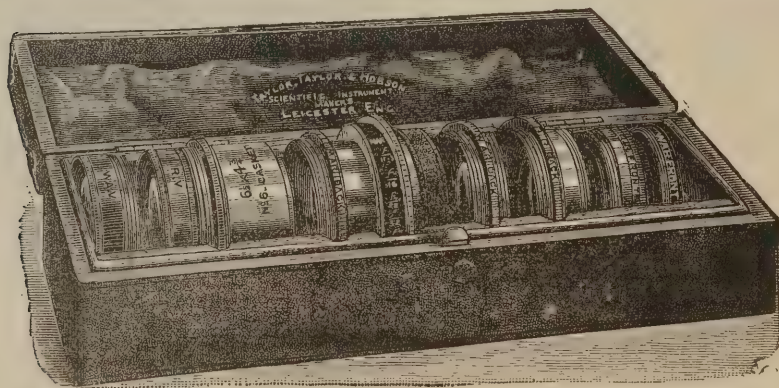


FIG. 6

getting nearer perfect in each stage, until at last they reach the hands of the examiner, who puts them through the most searching tests for astigmatism, spherical aberration, etc., and, upon his passing the lenses, they are finished and mounted. Every flint and crown is made to the truest gauge, and of standard size throughout. All lenses are made to standard gauges, which are all of steel. The gauge for each part is handed to the workman and his work is accurately examined and tested by the master

gauge or tools, so that it is quite impossible for imperfect work to get on the market.

Throughout the works the most perfect order and system

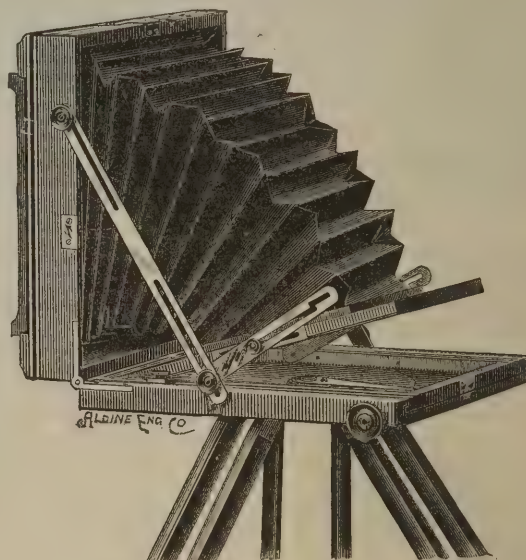


FIG. 7.

obtains. The stock, rough metal, finished metal, glass, finished lenses, and mounted goods ready for sale are all registered, so that at any moment the firm know what stock they have and what work the men have in hand. About seventy hands are now employed, and when we remember how young the firm is, we cannot help congratulating them upon the energy they have displayed, and the success their efforts have achieved. Mr. T. Smithies Taylor is the optician, Mr. W. Taylor, the engineer or works manager, and Mr. H. Hobson the business man. All three gentlemen are striving to do their utmost to advance photography by putting on the market the very best lens they can make.

We believe that they will gladly show their works to visitors interested in photography, and those who do visit the Slate Street works will come away, as we did, fully satisfied of having learnt much from the information and explanations so courteously given us.

**Royal Meteorological Society.**—At the usual monthly meeting of this society, held on the 18th inst., at the Institution of Civil Engineers, a very able paper was read by Mr. A. W. Clayden, M.A., on the subject of "Meteorological Photography." Transparencies of photographs of lightning-flashes, clouds, and other phenomena added to the interest of Mr. Clayden's remarks.

Preceding this paper, Mr. G. J. Symons, F.R.S., discoursed pleasantly on the history of rain gauges, the first of which, it appears, we owe to Sir Christopher Wren.

Dr. C. T. Williams, Vice-President, presided over the meeting which was well attended.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4583. **Norway.**—Is May too early to go here? What weather might I expect in that month? Should think of going to Stavanger, proceeding by land to Bergen, and returning by boat from there, or *vice versa*, spending a fortnight. Is it expensive? Would route indicated be good one from photographic point of view? Any hints would oblige.—**PHOTOS.**

4584. **Silver Stained Negative.**—Will some one be good enough to tell me how to remedy a silver stained negative? I attempted to print with it before quite dry; consequently, when I took the print off, the plate presented a series of red wavy lines which completely spoiled any future printing.—**FLETCHER HILL.**

4585. **Lens.**—Will any practical reader give his reasons why a rapid rectilinear is to be preferred to







first-class quality. Always pleased to help you. The greens in platinum toning are generally the result of under-printing.

BARTON.—We can trace no letter from you.

W. W. H.—Print to hand; we will tone and return you next week.

DEVELOPID.—The paper used was Jacoby's.

A. ORR.—We cannot help. Write to the Secretary; he will give you every information.

J. A.—Lecture Hall, Broadway, Hammersmith.

E. PATISON.—Not at present.

T. A. O. (Persia).—The first two numbers of the *Photographic Societies' Reporter* are out of print.

H. A. HALLIWELL.—Congratulate you and Mr. Firth upon having successfully formed a society for Wakefield.

WALTER W. RITCHIE.—Afraid we cannot spare time for further comment upon your print.

H. C. R. HARLAND (Cadapah).—By this mail we have written to you with short criticism on your prints and answers to your questions generally.

SACUL.—Reply sent by post.

W. G. BLACKIE.—Very many thanks.

P. R. AMBLER.—Thank you very much for the letter, re "Annual." The three prints show much care in selection, are slightly over printed, but are very fair samples of photography.

G. F. DIETRICH (Germany).—Will do our best to get the particulars.

J. H. RIDDETTE.—We much appreciated your note.

SNAP SHOT.—No name or address, therefore cannot publish your letter.

R. W. COPEMAN.—We insert the paragraph. Should have been pleased if you had entered the competition.

CARLSBAD.—See our rule. Will answer about stereo next week.

J. E. THORBURN.—We really cannot answer your questions. The camera was only in our hands for about five minutes, and we have sent your letter on to the makers, who will, no doubt, write you.

SOUTHPORT.—We do not advise upon apparatus; see rule at head of column. Any of the exposure books will be found useful. (3) Yes, for further information on toning see the "Amateur Photographer's Annual."

GRAMMAR, R. FIEST, AND INTERNATIONAL.—Will reply next week.

B. THORNTON (Petersburg).—Many thanks for letters. Shall be glad of further particulars.

VEXATIO.—Your letter shall be laid before those interested in the matter.

## Quarterly Examinations in Photography.

### QUESTIONS.

1. Describe in detail the process for stripping the film from a negative.
2. What do you consider the best method of packing plates or negatives for transmission by post?
3. Describe the production of a Woodbury-type print.

(Latest Day for Answers—April 6th.)

NOTE.—The above questions conclude the first quarterly examination. Intending competitors for the next quarter are desired to apply at once for registration. See also "Our Views," page 222.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the *AMATEUR PHOTOGRAPHER* will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the *AMATEUR PHOTOGRAPHER*, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent, the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

N.B.—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," etc. — *AMATEUR PHOTOGRAPHER*, January, 1888, to December, 1890, clean; accept best offer.—Hardcastle, Clifton Green, York.

*AMATEUR PHOTOGRAPHER*, vols. ix. to xiii. inclusive, all in reading cases; 12s. 6d. — No. 132, *AMATEUR PHOTOGRAPHER* office, 1, Creed Lane, London, E.C.

*AMATEUR PHOTOGRAPHER*, 40 numbers, 3s.; "Photography," 40 numbers, 1s. 6d.; mostly consecutive. —27, Albert Road, Peckham.

**Bicycle.** — Cushion tyre safety, diamond frame, ball bearings, ball pedals, first-rate machine, new this year, good make, easy runner, and good hill climber; £7 15s.; good bargain; approval with pleasure.—*Amateur*, 34, Hill Street, Ipswich.

**Burnisher.**—Quarter-plate burnisher, new, only been used few times, with spirit lamp; cost 7s. 6d.; cash 4s. 6d.—Fred Howden, Birstall, near Leeds.

Burnisher, on polished wood stand, 14 in. steel bar, steel roller, and steel pressure spring, fly wheel and pinion driving motion, new condition; price £3; worth double.—W. Crouchley, Lingard Street, Bedford Leigh.

**Cameras, etc.**—Lancaster's Instantograph, half-plate, complete; 35s. — Penrose, 15, Oak Street, Holgate, York.

Whole-plate camera, complete; cost £12 12s. new; cash £8; exchange for quarter-plate and cash. — 6, Vale View, Grosvenor, Bath.

Half-plate Lancaster's extra-special 1890 camera, with three double backs, scarcely used; £4 5s. — Pain, Kingswood, East Sheen.

Superb half-plate camera, brass-bound, double extension, three double slides, brass turntable, 3-fold sliding tripod, all most exquisitely finished, new this month; cost 11 guineas; sacrifice £8 15s.; photograph, with particulars, one stamp. — 61, Gayhurst Road, Hackney.

**Cameras, Lenses, etc.** — Whole-plate camera, Stereoscopic Co.'s very best light pattern, every movement, three double backs, Optimus 9 by 7 R.K. and W.A. lenses, focussing cloth, solid leather case, and tripod, all equal new; cost £27 15s.; price £17; approval; deposit.—Bygrave, 15, Canterbury Road, Brixton, S.W.

Quarter-plate sliding box camera, with lens (by Millelt); bargain, 15s. cash, or exchange anything useful to value; 20s. — Chamberlain, Wantage, Berks.

Lancaster's quarter-plate Meritole camera, complete with lens, tripod, and two double backs, in thoroughly good condition, cost 37s., price 22s. 6d.; also *AMATEUR PHOTOGRAPHER*, vols. vii. and viii., extra-strongly bound, 7s. 6d.; vol. ix., unbound, 2s. 6d. — R. T. Rossiter, Palace Avenue, Paignton, Devon.

7½ by 5 square reversing double extension Spanish mahogany camera, three patent dark-slides, two cases; £7 7s.; or, with lens, stand, shutter, etc., £10 10s.—Photo, 173, Hemingford Road, N.

Quarter-plate mahogany box camera, with slide and excellent doublet portrait lens complete, price £1; also half-plate bellows camera and double dark-slide, no lens, price £1; also new half-plate burnisher and lamp, complete, price 9s. — A. Tyler, Creek Road, March.

Whole-plate bellows camera, will extend 2 ft. for copying, square reversible swing-back, three double slides, with half and quarter-plate holders, lens, stops, cap, pneumatic shutter, Kennet stand, printing frame, two celluloid dishes, all cost new; the lot £10 — L. O., 12, Couthouse Road, London, N.W.

**Hand-Cameras, etc.** — Hand-camera, Rouch's Eureka, cost £7 12s. 6d., covered morocco leather, nearly new; £5. — W. M. Miller, 9, Braydon Road, Upper Clapton, London.

Fallowfield's Facile, mahogany body, takes 12 quarter-plates, good as new; £3; or exchange to value. — C. Wood, 106, Lower Edwardes Street, Birmingham.

No. 1 Kodak, almost new, in leather case; price 50s.; cost £5.—S., 4, Seville Street, Lowndes Square.

Hand-camera, Samuel's quarter patent, new, 42s.; rectilinear lens, 7 by 5, hood, stops, working f/8, 25s.; canvas camera case, strong, good straps, leather-fitted, 9s.; approval. — 1, Hermitage Mews, Stamford Hill, N.

Swinden and Earp's hand-camera, perfect condition, new last month; approval; deposit; £6.—H. C., 54, Cheestergate, Stockport.

Talmer hand-camera, almost new, holds twelve quarter-plates; cash 35s.—Colebank, 8, Strand, Torquay.

Turnbull's quarter-plate hand-camera, 3 double backs, R.F. lens, adjustable focus, nearly new, £3 10s.; Hawkeye hand-camera, three double backs for 5 by 4 plates, fitted rapid view lens, adjustable focus, cost £6, sell £2; good condition. — Collins, Chalfont, Bucks.

**Lenses, etc.**—For sale, a pair of Harrison's Globe W.A. lenses, 3 in. focus, cost £4 16s., price £2 10s.; Levi's portrait lens, 15s.; Lerebours and Secretan's quarter-plate portrait lens, 15s.; quarter-plate portrait lens, 10s.—F. R. Upcott, 135, Brigstock Road, Thornton Heath. (Can be seen at the offices of the *AMATEUR PHOTOGRAPHER*.)

Half-plate rapid rectilinear f/8 lens, Waterhouse stops, good condition; 21s.—H. Rowe, Wallbridge, Stroud.

Portrait lens, quarter-plate, in good condition, recently rendered thoroughly achromatic by Franks, of Manchester, very cheap; 20s.—R. M. Jones, 93, Tweedale Street, Rochdale.

Burr's carte portrait lens for sale, price 25s.; cabinet portrait lens, 17s. 6d.—J. Chalmers, 61, Campbell Street, Hamilton.

Ross' No. 8 portable symmetrical, £8 10s.; Ross' 10, by 8 rapid symmetrical, optical centre marked, £7; both as new.—D. Smith, 14, Frogat, Hampstead.

Ross' R.S. lens, 8 by 5, little used; £4 10s.—Robt. Morrison, 21, Clare Street, Dublin.

Half-plate instantaneous lens, with pneumatic time and instantaneous shutter; 21s. — Jones, Gazette Office, Malton.

Quarter-plate rapid rectilinear lens, good condition, Waterhouse stops, in case; 21s.—Martin, Dean-gate, Auckland Road, Upper Norwood.

**Roll-Holder.** — Thornton's 12 by 10 roll-holder, Tourist pattern, has ball indicator, and registers number of exposure; for £5 15s. 6d., or offers.—Address, Editor, *AMATEUR PHOTOGRAPHER*.

**Roller Press.** — Will exchange 18 in. by 12 in. roller press, iron bed, double pressure, steel plate, nickelled, and top roller nickelled, for whole-plate rapid rectilinear, by good maker; photograph sent. — Spink, Herne Bay, Kent.

**Sets.**—Lancaster's International set, comprising half-plate camera, lens, tripod, two dark-slides; £4; little used.—McGibbon, Chemist, Edinburgh.

Lancaster's half-plate Meritole set, complete, with two double backs; price 35s.—Address, B. A. Smith, Spring Villa, Putney Road, Handsworth, Birmingham.

**Shutters.**—One Newman's half-plate instantaneous shutter; £1. — Apply, A. B. Larkins, 49, Ebleham Road, Kensington, W.

Optimus Plunge shutter, for 10 by 8 lens, cost 48s., good condition, £1; Optimus Right-about Turn, for whole-plate lens, cost 35s., good condition, 15s.; Optimus quarter-plate Economic, 6s.—Collins, Chalfont, Bucks.

Newman shutter, half-plate, in excellent condition; what offers? — S. B. Haw, Greenheys Road, Liverpool.

**Sundries.**—Splendid collection of over 700 stamps (Oppen's album) for sale, or exchange for Lancaster's Omnigraph hand-camera, must be in splendid condition.—Bennett, New Walk, Beverley, Yorks.

Walking stick stand, splendid stick; price 6s. 6d. — No. 131, *AMATEUR PHOTOGRAPHER* office, 1, Creed Lane, London, E.C.

Three dozen plates, 7½ by 4½, strong plate box, 50 grooves; 10s. 6d. lot.—Jones, Gazette Office, Malton.

**Tricycle.** — Tricycle (Brooks' patent) for sale or exchange, cost £22 about eight months ago, ball bearings throughout, two saddies, one Brook's patent lamp, in perfect condition, equal to new; none need apply only those that want a really good machine; will exchange for good whole-plate camera, three double dark-slides, and lens, must be thoroughly good, or offers. May be seen any time by appointment.—Lovell, Bridge Street, Godalming.

**Views.** — Peak of Teneriffe, Great Olders of Palma, views.—Soar, 1, Sussex Villas, Kensington, London, W.

### WANTED.

**Burnisher.**—Burnisher, half-plate, cheap, in good condition; mention makes and particulars.—James Martin, 22, Kidbrook Grove, Blackheath, London.

**Camera, etc.** — Quarter-plate or 5 by 4 camera, with slides, etc., Bare's make, Kinnear's make; write.—O. Nowell-Usticke, 108, King Henry's Road, South Hampstead, N.W.

**Cameras, Lenses, etc.** — Quarter plate camera, lens, and tripod, cheap for cash.—F. Howden, Birstall, near Leeds.

Half International or Instantograph, '90 or '91 pattern camera, lens, etc., must be good and cheap; approval cash.—Holman, Penarth, Cardiff.

**Coudenser,** for enlarging, 6 in., must be cheap.—Ferguson, Post Office, Kirkcaldy.

**Lenses, etc.**—6 by 5 rapid rectilinear, Dallmeyer or Ross, lens. — W. Grimshaw, Bold Street, Liverpool.

**Shutter, etc.** — Thornton-Pickard time and instantaneous shutter, to fit 2½ in. hood; also last volume "Photographic Reporter," unbound, cheap for cash. — J. Halliwell, New Veterinary College, Edinburgh.



# The AMATEUR PHOTOGRAPHER

Telephone No 1645

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FRIDAY, APRIL 3, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.

OUR VIEWS.—Lantern Slide Competition—Free Portraits, Action for Damages—Photography in Cape Colony—Popularity of the AMATEUR PHOTOGRAPHER Competitions—Photographic Exhibition at Gloucester—The Camera Club Conference, Programme—London Stereoscopic Company, Ltd., Annual Meeting—The Newcastle Photographic Association—The Liverpool Photographic Exhibition—Caelmsford Camera Club—Exhibition at St. Petersburg—The "Griffin" Hand-Camera, Dine's Patent.

LEADER.—Home Portraiture.

LETTERS TO THE EDITOR.—A Plea for Young Amateurs; A Reply (C. R. Wright)—Photographic Survey of Exeter (John Sparshatt)—Postal Photographic Club (T. T. S. Metcalfe)—Exposure v. Development (Hurter and Driffield, R. C. Macleod)—Hydroquinone Development (Stanley C. Bright)—Liverpool Exhibition; a Protest (T. S. Mayne)—Liverpool Exhibition; Standard of Work (T. S. Mayne)—Photography in Natural Colours (A. A. Mantell, Faibenlehre)—The Storm in the Naturalistic Crater (P. H. Emerson)—Construction of Lenses (C. J. Leaper)—Federation of Societies (F. W. Edwards).

COMMUNICATED ARTICLES.—Construction and Use of Photographic Lenses, Illustrated (Leaper)—Chemistry for Photographers (Bothamley)—Photo-Micrography (Pringle)—Photographic References (Nott).

EXHIBITIONS.—Liverpool.

NOTES.—Paris.

NOTICES, ETC.—Meeting of the London Stereoscopic Company—New Premises of Messrs. Adams and Co.—Where to Go—Round about the Clubs; Croydon.

SOCIETIES' MEETINGS.—Ash'ton—Blackburn—Dukinfield—Ealing—Graphic—Great Yarmouth—Huddersfield—Ipswich—Ireland—Newcastle-on-Tyne—North Middlesex—Oxford—Putney—Sheffield Camera Club—Wolverhampton.

A VERY considerable number of ladies and gentlemen were present at our offices when the lantern slides contributed to the third Monthly Competition, "Animals and Instantaneous Pictures," were passed through the lantern. The prizes have been awarded as follows:—

*First Prize (Silver Medal).*

THOS. B. SUTTON .. .. . Liverpool.

These slides are on Mawson's plates developed with hydroquinone. "A Quiet Corner" is a well-lighted picture of cattle in a brook. "Jumbo" is an excellent portrait of a fox terrier.

*Second Prize (Bronze Medal).*

Major A. P. G. DOWDALL .. .. . Exeter.

This competitor's slides are both instantaneous studies of the "Flying Dutchman"—"Getting up Steam," and "Shutting off Steam." The original negatives were taken in a hand-camera. The slides are admirable examples of excellent work on Thomas's plates, by contact, developed with hydroquinone.

*Third Prize (Certificate).*

S. L. COULTHURST .. .. . Manchester.

The slides sent by this competitor are on Mawson's plates,

made by contact and developed with hydroquinone (Thomas's formula). The subjects are agricultural—"Reaping" and "Cattle at Moston." Only some thirty competitors sent in to the competition. The slides as a whole are of very fair average quality, only three competitors being classed with the third class. The full list is published in the *Photographic Reporter* for this month.

WELSHMEN are well able to take care of themselves in all business matters. Recently a free portrait company entered into negotiations with Police Sergeant Owen for the usual "two guinea portrait free of charge," and had the regulation correspondence about the frame, etc. The sergeant waited forty-eight days, and then received back his original photograph in a torn and damaged state, and at once sued the company in the county court for breach of contract, £2 2s., and damage to photograph, 6s. The day before the case was set down for hearing the company paid the full amount and costs into court. A local newspaper says—"People at Bettws-y-coed are now on the look-out for similar advertisements, as they can see their way to making a couple of guineas easily by replying to the advertisement, and in the event of failure to fulfil, to sue for damages, with every prospect of getting them, and with no risk of loss."

In proof of the popularity of our loaning of photographs and lantern slides, we have received the following application from King William's Town, Cape Colony:—"As our winter season is just opposite to yours, it has occurred to me that you might be able to send us a set of the AMATEUR PHOTOGRAPHER lantern slides and competition prints. These would be specially useful to us from an educational point of view; we are all amateurs, and have started work since our arrival in the colony. None of us have been in England for eight years or more, and have not the advantages of our amateur brethren in England of seeing the work at various exhibitions."

We have arranged to send out both slides and prints by an early mail.

WE understand that the Exhibition to be held at Gloucester from the 20th to the 30th promises to be a great success. Already more than one hundred entries have been received. During the Exhibition, lantern shows will be given in the evenings. On Thursday, the 23rd inst., Mr. Charles W. Hastings will show the 1890 AMATEUR PHOTOGRAPHER Prize Slides.



THE Camera Club Conference, as already announced, will be held next week. The following is the programme, as issued by the Committee:—

Tuesday, April 7th.—Conference at the Society of Arts, 18, John Street, Adelphi, to be opened by the President at 2 p.m. Papers to be read from 2 p.m. to 5.30 p.m. in the theatre:—Captain W. de W. Abney, R.E., C.B., D.C.L., F.R.S., Presidential Address; Mr. Lyonel Clark, C.E., "The Use of Uncorrected Lenses;" Mr. Joseph Pennell, "Photography as a Hindrance and a Help to Art;" Rev. F. C. Lambert, M.A., "Note on the Physiological Aspect of Some Problems in Art." At 8 p.m., exhibition of lantern slides in the theatre.

Wednesday, April 8th, 2 p.m.—Renewal of Conference in the theatre, Society of Arts. Papers to be read from 2 p.m. to 5.30 p.m.:—Major J. F. Nott, "Photography and Illustrated Journalism;" Mr. C. V. Boys, "An Application of Photography;" and a paper by Sir H. Trueman Wood. At 7.30 p.m. the members and friends will dine together at the Criterion Restaurant.

The annual exhibition of photographs by members will be on view at the club-house from 10 a.m. to 4 p.m. Admission by card from any member of the Club, or by ticket from the Hon. Sec. The exhibition will remain open for about six weeks from Tuesday, April 7th.

We have pleasure in calling special attention to the Committee's invitation to all photographers to attend the Conference.

To the country members, the new club-house will certainly offer an additional attraction for the Conference week, and we are sure that they will cordially congratulate the Committee on the work they have done. We might perhaps mention that on Monday, the 6th, there will be a musical evening at the Club, which is sure to be well worth attending.

THE annual general meeting of the shareholders of the London Stereoscopic Company, Limited, was held last week, when a dividend at the rate of 5 per cent. was declared, £1,000 added to the reserve fund, and a balance carried forward of £328. The Chairman, Mr. Howard J. Kennard, spoke in very satisfactory terms of the business done and the advances made in every branch of the Company's business. He referred to the great increase of work done in the photo-mechanical department, and said that, acting upon the advice of their Manager, they had added another storey to their buildings, and had largely increased the plant. We were at the Regent Street premises a few days ago, and found the Managers of the different departments full of work, and the show-rooms full of customers. It has been very truly said that the Stereoscopic Company were the pioneers of photography for amateurs, and they still enjoy the support and patronage of the leading amateurs at home and abroad.

THE Newcastle Photographic Association have had a very successful year. The members now number 120, and a very considerable number are active workers. The exhibition held during the past year was a great success. The Association's finances are in a very satisfactory state. In moving the adoption of the report, the President, Mr. A. S. Stevenson, paid a high compliment to the services of the Hon. Sec., Mr. Edgar G. Lee, who, in conjunction with Mr. Brown, did so much and worked so untiringly to make the exhibition a success. Mr. Lee has already won many laurels, especially for lantern-slides; the care that he takes in selection of point of view and technique has earned for him the reputation of being a most painstaking worker.

We gladly publish the letter from Mr. Thos. Mayne, in which he comments upon the remarks we made last week

on the Liverpool Exhibition; we do not think that we spoke in the least disparagingly of the exhibition as a whole, and he explains in some measure the possible reason why "prominent workers abstained from sending in pictures." We regret their absence, and are sorry to notice that so many whose pictures we are accustomed to see at Pall Mall did not respond to the invitation of the Committee, and so have helped them to make the exhibition even a greater success than it has been. We are asked to notice that the exhibition remains open until Saturday in this week, and that upon every night two lantern demonstrations and on every afternoon and evening a promenade concert are given. Further particulars will be found in another column.

ANOTHER photographic society has been formed—the Chelmsford Camera Club. Already a considerable number of members have been enrolled. The Hon. Secretary, Mr. Alfred J. Jeffries, Bridge House, Chelmsford, a gentleman whose photographic work is of a very high standard, will be glad to send a copy of rules, etc., to anyone who may desire to join the club.

THE Photographic Exhibition at St. Petersburg will be open from the 17th to the 29th of this month. We shall probably give a short account of the pictures exhibited.

At the Photographic Society's meeting, a few nights since, several hand-cameras were exhibited. One which excited considerable attention was the "Griffin" improved hand or detective camera, Dine's patent. It is hardly ready for the market, but as it has several special features, we would briefly call attention to the main points: (1) a light grooved box or magazine, which can be placed in the camera without taking it into a dark room, and can be recharged in daylight; (2) each plate can be exposed at the will of the operator; (3) any number of light-tight boxes holding twelve plates may be taken when on tour. The camera will be put upon the market very shortly by Messrs. John J. Griffin and Co., of Garrick Street, W.C., and we shall refer more fully to it in a subsequent issue. Messrs. Griffin have kindly consented to send one to our offices for exhibition purposes.

#### HOME PORTRAITURE.

ONE of the most important of all accessories for home portraiture is the background; nothing is so painful as to see a fine head spoilt by some not always artistic wall paper, which is generally so sharply focussed, that one may count every petal on some impossible flower, or see joins and irregularities in the said paper. If we want to turn out artistic work, wall papers must be avoided as a rule; rarely do the patterns lend themselves for use as backgrounds, and even when they do, they should be thrown out of focus so as to become mere suggestions rather than concrete shapes.

There are, of course, portable backgrounds to be obtained commercially, of perfect quality, and at such a price as to bring them within the reach of all—a glance at our advertisement pages will at once give the requisite information as to sizes and prices, etc. But many of us have a great hankering after home-made contrivances, and the few hints we may give may be of service to those handy with carpenter's tools.

The first background we ever used was the so-called felt paper, or wide brown paper as used under carpets; this may be obtained from almost any house furnishers, about six feet wide and any length. Having obtained the paper, the next question is how to mount it. For this purpose procure



an ordinary blind roller of the requisite length, and fold down six inches of the paper at one end, and having some thin glue ready, coat the turned down portion of the paper with the glue, place the roller under the fold and dab quickly into contact with a cloth. It is obvious that we mean the underneath side of the turned down strip is to be glued, the turning down being merely a device to obtain the paper straight on the roller, otherwise we may get some nasty bulges in the background. When the glue is dry, a sufficient length of the paper may be cut off, and a lath glued into it in the same way as the roller. About eight feet will be found a convenient length, and we have thus a background six feet by eight feet of one uniform tint. This will serve its purpose well, and may be rolled up and stowed away in some convenient corner when done with.

A more durable background may be made of the material used for blinds, and with this we can obtain two or three backgrounds without much expense. Thus we may choose a pale buff which will give us a pale tint suitable for dark people, and by choosing also a deep green or deep red, we can obtain a dark background for fair hair, white or light dresses, and children. There are one or two points in connection with the background which it will be as well to mention before proceeding any further. The first is, when mounting cloth backgrounds it is advisable to nail them to the roller, exactly like a blind, and an important point in this, as in the paper backgrounds, is to get them to hang straight; this can best be done by commencing to nail in the centre, working out to the edges and giving the cloth at each nail a gentle stretch, we then get no bulges or wrinkles. The second point refers to the choice of colour. It is well known that the illumination in most rooms is poor, and it is also a well-recognized fact "that coloured surfaces undergo changes of tint when they are seen under a very bright or very feeble illumination," hence it is advisable to choose rather a lighter tint of any colour than we actually desire, as in the poorly-lit room the tint will actually appear darker than it really is.

The next question to consider is how to support the background, and this requires practically a frame, or stand, which can be easily made from deal by a carpenter, or even by the amateur himself. The frame should take the form of an inverted V, thus  $\Delta$ , and one of these at each end will be quite sufficient to support any background it may be desirable to use. Personally we use two iron rods which were originally used as curtain suspenders we fancy; these are bound together near one end so as to leave two little cross-pieces, about six inches in length, which crossing over form a fork in which the ends of the roller rest, these at each end serve to support the background. The lower ends of the iron rods are inserted in holes bored in pieces of deal six inches square and two inches thick; this prevents the rods slipping, and enables one to shift the background about as one likes.

—♦♦♦♦♦—  
**"Photography in a Nutshell."**—Mr. William Tylar, of High St., Aston, Birmingham, has sent us the last edition of this admirable little manual bound in cloth and interleaved for notes. The arrangement of the matter which treats of photographic manipulation and procedure, is on novel lines, and will be found serviceable to both the beginner and advanced worker. The copy before us has a complete catalogue of Mr. Tylar's many excellent specialities. We understand that Mr. Tylar is in treaty for the publication of his manual in French and German. Mr. Tylar has also sent us a useful packet of "light-tight bags" for packing exposed plates. In these bags two plates are placed face to face with a layer of chemically pure vegetable fibre between the films, and then enclosed in a yellow or non-actinic envelope, and still further protected by enclosure in a strong black envelope. This packing ensures perfect freedom from risk of fogging. The envelopes are very strong, very cheap, and, like all Mr. Tylar's "dodges," very useful.

## Letters to the Editor.

### A PLEA FOR YOUNG AMATEURS—A REPLY.

SIR,—I was very much surprised at the tone of "A. C. C.'s" letter of last week. He casts a grave reflection on photographic societies in general, societies whose chief aim should be to help the beginner, both by practical tuition and social intercourse. I think he is inclined to take the matter from too personal a view and airs a grievance by which he perhaps is the only sufferer.

There is always one person to be met with in nearly every society—that is Mr. "Bore." He takes the form of an individual who is for ever poking prints and negatives under everyone's nose, and generally descanting on the merits and demerits of this, that, and everything else. Such an individual is inclined to be sat on, and deservedly.

Speaking from my experience in connection with our society at East Southsea, I may say that one of its leading features is the cordiality with which a beginner is welcomed and the practical help that our more advanced members are only too pleased to extend.

By the efforts of a hard-working committee, supported by an increasing membership, our Society hopes to afford to its more inexperienced members that practical and social assistance which shall do away with all possibility of any local advertisements of "camera for sale" taking place under the conditions enumerated by your correspondent.—Faithfully yours,

March 22nd, 1891.

CHAS. R. WRIGHT.

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### PHOTOGRAPHIC SURVEY OF DEVON.

SIR,—Last year the Exeter Am. Phot. Soc. started on a photographic survey of Devon, which should prove very interesting and even valuable.

We are endeavouring to secure the co-operation of all the photographic societies in the county, so that the work may be divided, and more thoroughly accomplished than would be possible by one society alone. We venture to appeal, through your columns, to those photographers who have any negatives of places of interest, for prints from the same, in some permanent process, or for the loan of such negatives for a short period. I need not say that every possible care would be taken of them.—Yours, etc.,

JNO. SPARSHATT  
(Hon. Sec.)

Fairfield House, St. Thomas, Exeter,  
 March 24th, 1891.

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### POSTAL PHOTOGRAPHIC CLUB.

SIR,—Will you kindly allow me to reply through the AMATEUR PHOTOGRAPHER to the very numerous letters I have received re my Postal Photographic Club. I beg to say that I sent my letter and the copy of the rules, which appeared in the AMATEUR PHOTOGRAPHER of the 20th, only as a help to anyone wishing to start a similar club, and not as an advertisement of the P.P.C.C.; our members' list is quite full, and we have no vacancies. Thanking you in anticipation for inserting this, I am faithfully yours,

March 25th, 1891.

T. T. S. METCALFE.

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### EXPOSURE V. DEVELOPMENT.

SIR,—We read with interest the letter of "E. A. D." in the last issue of your journal, as he appears to be a beginner whose progress is impeded by erroneous teaching on the subject of development. We are sure that nothing can be so disheartening to the tyro as to be constantly informed on all sides by great authorities that he has it in his power to correct errors in his exposures by suitable modifications in development; and yet, when he comes to test this statement in practice, to find, like "E. A. D.," that he, at any rate, cannot do anything of the sort. No wonder the beginner, as a rule, keeps his failure to himself, lest he should be credited with incompetence and stupidity. We are, therefore, pleased that "E. A. D." has come forward, and we are convinced that the conviction now dawning upon him would be echoed by hundreds of others, did they not fear that to give expression to their opinions would be to admit their own incapacity.

If, however, "E. A. D." and others whom it may concern, care to take our advice, which we firmly believe will lead them to the goal, it is as follows: Stick firmly to your own presentiment that "an under-exposed plate remains an under-exposed plate, and an



over-exposed plate an over-exposed one." It is the light which settles this, and not the developer; in spite of all opinions to the contrary, therefore, make exposure the object of your greatest care. Apart from the art aspect of the question, it is the exposure which makes or mars the negative. Use the best plates you can procure, and by the best plates we mean those richest in silver. Upon this depends their capacity for the truthful rendering of tone, and also the amount of latitude in exposure. Adopt ferrous oxalate as your developer, for it will yield negatives which are not to be surpassed; and should occasional results indicate error in exposure, rest assured that nothing you could have done in development, or can do subsequently, will remedy a false relationship in the gradations established by the light alone.—Yours truly, F. HURTER AND V. C. DRIFFIELD.

Appleton, Widnes, March 28th, 1891.

SIR,—I have, like "E. A. D.," been carrying out a series of experiments with hydroquinone for negatives, bromide paper, and lantern slides. If you think my experience of any use, you may, perhaps, be willing to afford me some space. For copying prints, or work of that kind, I think quinol beats any other developer, but for that very reason, that it gives very strong contrasts, it is most unsuitable to landscape work. I personally prefer good work to clean fingers, and never mean to use quinol for any save copying work. I believe, too, that pyro is mainly very dirty because so much of the water we use has iron in it. Use distilled water, and your fingers will not get so dirty.

With bromide paper I find quinol will yield prints indistinguishable from platinotype if you have a perfectly suitable negative, but it very often gives a nasty greenish colour, and in my hands, at all events, with anything at all approaching a hard negative, it yields terrible results, while by reducing iron in the ferrous oxalate a great deal may be done. I have, therefore, decided to give up quinol for bromide paper.

For lantern slides, however, I find quinol unrivalled. I use ammonia as the alkali, as the other alkalis are all apt to give a green tone. For some, to me, hidden reason, ammonia seems to be a far less powerful accelerator with quinol than with pyro, and exposure has to be prolonged and the ammonia added in considerable quantities; I find a large quantity of bromide is also desirable. The following is about the ordinary developer I use, giving a long exposure:—

Quinol .. .. .	4 gr.
Bromide potassium .. .. .	1 to 2 "
Ammonia .. .. .	4 "

—Yours faithfully,  
March 30th, 1891. R. C. MACLEOD.

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#### HYDROQUINONE DEVELOPMENT.

SIR,—I notice in your issue for March 27th, just received, a letter touching upon hydroquinone development. May I crave a small corner of your valuable space for reply?

Like your correspondent, I have not been long at photography, and have met with the same difficulties that he mentions. I began with pyro, but as my profession during the day demanded clean hands, the above developer was soon put on the shelf and replaced by hydro.

After many failures, I found that even with normal exposures (Ilford plates and formula) I always got better results by mixing, in the proportion of 2 of hydro to 1 of accelerator, instead of equal parts, adding the rest of the accelerator when minute details in the shadows were just making their appearance, and when these were well up, adding two or three drops of 10 per cent. bromide. This way I got splendid negatives with every gradation of tone.

In the case of under-exposure I find it best to soak first in the accelerator, and then add the hydro, and in cases of known much over-exposure, I place in hydro alone, with three or four drops of 10 per cent. bromide, and cautiously add the accelerator drop by drop and more bromide if necessary, and have saved more than one negative this way. Trusting these remarks may be of use to your correspondent, yours truly,  
Genoa, March 28th, 1891.

STANLEY C. BRIGHT.

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#### LIVERPOOL EXHIBITION—A PROTEST.

SIR,—In reply to "An Exhibitor," the errors over Nos. 381 and 383, etc., were merely printer's errors, which have been corrected in second edition of catalogue.

Regarding the awards, the almost universal opinion is general

satisfaction. The judges had full power to withhold or award extra medals.

It really would be difficult to arrange a class where each exhibitor should be allowed to judge his own work.—Yours truly,  
March 24th, 1891. T. S. MAYNE (Hon. Sec.)

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#### LIVERPOOL EXHIBITION—STANDARD OF WORK.

SIR,—Will you allow me a word in reply to the remarks on page 223 of your last issue.

You have referred to your close examination of the catalogue as to the conspicuous absence of "our prominent workers." That a few names are not to be found we regret, but I am confident we have on the walls work equal in every respect to any ever shown by any of the absentees.

Another feature in the Liverpool Exhibition is that about 100 champion class pictures of the very highest standard which have ever been medalled at public exhibitions are placed in one class, and, of course, if these pictures were scattered over the rooms in many of the classes these prize pictures might come under more general notice.

Another point is, some of the absentees may not have found it possible to contribute work which they had "never before exhibited," others that the set of "four" was not convenient.

We struck out in 1888 a bold course with respect to work which had been for years round the provinces, the rule we then ventured on is now almost universal.

In this year's exhibition we moved ahead on our own lines and have every reason to be gratified that we have on the walls such splendid results contributed by hitherto unknown names. I will just mention two names, the Countess Loredana and H. Lloyd Edwards, both amateurs, and probably (with one notable example excepted) no work of such universal good merit was shown in 1888.

I will merely conclude with confirming what I said at the opening, "That the Exhibition is a distinct advance on that of 1888. The judges have had a most difficult task, because they had to face such a lot of good work."

This view is over and over again endorsed by the presidents and officials of the leading societies throughout the kingdom, and I believe was the united opinion of the six judges—four at least, I know, said the Liverpool Exhibition was the finest they had ever seen—both in quality, quantity, and excellence of arrangement.—Yours truly,  
March 30th, 1891. T. S. MAYNE.

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#### PHOTOGRAPHY IN NATURAL COLOURS.

SIR,—I have met several persons lately who have jumped to the conclusion, from what they have read in the newspapers respecting "photography in natural colours," that the secret has at length been discovered, and that before long they will be able to obtain photographs in all the exquisite colours they see when looking at a landscape or rather picture on the ground-glass of a camera, and it is marvellous how impossible it is to persuade any such that it is a romance, the fact being quite sufficient for them that they have seen it in the *Times*. I am an amateur worker and experimenter of upwards of thirty-six years, and this long experience has told me that this consummation of photography will never happen.

Much absurd literature, chiefly theoretical, has been written, is being written, and will continue to be written on this subject, and I should therefore like to record this as the opinion of "an old Parliamentary hand," that neither the present nor any future generation will see it accomplished. I am aware that this letter may call forth some strong invective from some persons who love controversy for its own sake, but nevertheless I feel sure that, with Captain Abney, I shall be on the winning side.—Yours, etc.,  
A. A. MANTELL, M.D. (Surgeon-Major).

March 28th, 1891.

SIR,—I am pleased to see Mr. Lacy has not retired altogether from the discussion on the above subject. Evidently we have not in common the same mental definition of subjective, but I do not think we need quarrel about that; even if, as he states, the subjectivity of a phenomenon has no existence outside the object, it cannot be impossible to so arrange noumena as to present precisely the same subjective phenomena, as pointed out in your issue of March 13th, page 183, by F. W. Stow; therefore why can



we not so arrange our deposits of silver to give rise to colour? Mr. Lacy admits "that colours can be produced by various mechanical means," yet he refuses to admit that we may make use of photography and a silver image as one of the "various mechanical means." If Mr. Lacy is right, then it is impossible to produce colour by enclosing a thin film of air between any two glass surfaces or by a thin film of oil on the surface of water, or by a soap bubble, but these things actually are, that is to say, we can, with certain curvature lenses, so arrange them as to give definite thicknesses of air films and definite colours, which can be produced *ad libitum* under precisely similar circumstances.

I am sorry I asked Mr. Lacy about the bull, and it might almost have proved the proverbial red herring, and could still lead us into a Darwinistic discussion. I may be descended from a primordial article or protoplasmic slime, just the same as an oak or an elm, or any of the animals which had such a natural antipathy to Mr. Lacy, but that has nothing to do with the subject in question.

If, as Mr. Lacy says, he does "not feel myself at the present time competent to discuss" the phenomena of light, why did he question an objective fact and declare it an impossibility? That your readers must in part agree with your correspondent from his last letter is an absolute necessity when he states that "there are in nature hundreds of colours that are not in the solar spectrum, and cannot be produced by any combination of its colours." To what does your correspondent ascribe these colours? Presumably Mr. Lacy expects an editorial reply to his question about your leader; it is not, therefore, in my province to answer him on this point, and I leave him to your tender mercies. Unfortunately, I cannot refer to Casati's work, so am unable to test the correctness of this author's statement, but would he have us believe that green trees and the magnificent equatorial colouring of birds and flowers are not perceived by these aboriginal savages? What are the bases of such a statement, and who is Casati to be the man to advance it? Might we not just as well affirm that the old artist of Corinth, Kleophantes, who was strictly a monochrome painter, and who is stated to have been the first to use colour as an aid to drawing after the re-discovery as claimed by the Greeks about 800 B.C., might we not as well assume that he, as well as the Greeks, knew of but one colour? The same argument would apply to every early nation under the sun, for to imitate form as we see it is a natural instinct, to colour it the next step, and monochrome soon gives place to polychromy, the latter becoming more and more complex, more and more beautiful, and more naturalistic—true to nature—as civilisation advances.

I am quite certain that there is no colour, whether natural or artificial, which cannot be imitated exactly by the colours of the prismatic spectrum, combined, intensified, altered by differences of degrees of mixture, luminosity, and such like causes. If a gorgeous sunset is not due to the effect of various substances acting in different ways upon the light emitted from the sun, which we can prove to be compound, then to what is it due? Mr. Lacy says colour is only subjective; does he want to set up an objective or another subjective phenomena, as the cause of his sunsets and glows?—Yours truly, FARBENLEHRE.

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#### THE STORM IN THE NATURALISTIC CRATER.

SIR,—When I wrote my book I did not write it for my own glorification, but purely and simply with the intention of trying to help the photographic world to give the fullest expression to the very limited art that they practised. I was justified in thinking I might help them by the attention which my own photographs had received in the photographic world. I regretted the loss of several months' work, which the preparation of the book cost me, but the spirit of the reformer was strong in me and it had to find expression. I have since learned that in art matters, all attempts to bring others to think as you do are hurtful rather than useful. However, to return. I distinctly stated what claims I thought I had to originality. I claimed that I had attempted to reduce naturalistic teachings (which I said were as old as ancient Greece) to *scientific first principles*, and to *apply those teachings to photography*. That was my claim. I still claim I can prove as much, but I am not so greedy for a character for originality as those "who break new ground in the land of Constable" (G. Davison).

The study of development and of new scientific discoveries, psychological and physical, determined me to renounce my former views, and to break a conspiracy I have long watched with amuse-

ment—a conspiracy of which I shall one day write the full history if only as a study of character.

Amid all this turmoil arose a whisper that I had got some of my ideas from a certain book, a book devoid of science and scornful of photography. I refer to "Naturalistic Painting." As a mere matter of dates, my first writing on the subject came first; as a matter of incidental proof, I mentioned the receipt of a letter. Busy-bodies have now been round trying to make mischief, but they shall not succeed. Mr. Bate shall see the letter, and its author will explain the matter to me and to Mr. Bate, and the misunderstanding shall be removed. This is no public matter, but one that concerns us three only.

My writings take precedence of those of Mr. Bate by date. The suggestion that Mr. Bate was in any way influenced by me, I have publicly repudiated.

Every day that I live and grow to see art matters more clearly, I deeply regret I was ever in any way identified with naturalism. —Yours, etc., P. H. EMERSON.

\* \* \* \*

#### CONSTRUCTION OF LENSES.

SIR,—I am extremely obliged to Mr. Lewis for his kindly criticisms, and in reply thereto beg to state that the  $h$  in the diagram given on page 130 should be a  $p$ , and was unfortunately mistaken by me for one. As regards the diagram on page 129, the letters  $e f$  refer, of course, to the direction of the rays  $a b, c d$  after refraction. I might have better perhaps omitted the  $f$  altogether, placing the  $e$  at the point where the rays meet on the axis.—Yours, etc., CLEMENT J. LEAPER.

Dublin, March 27th, 1891.

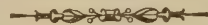
\* \* \* \*

#### FEDERATION OF SOCIETIES.

SIR,—I notice in the report of the meeting *re* the proposed federation scheme, held on March 23rd last, that my name is mentioned as having been elected a member of the Committee. As this was done without my knowledge or consent, and not having been present at any of the meetings, I must protest against this irregular proceeding, and decline to recognise the appointment. Moreover, the greatly increased duties caused by the rapid growth of the South London Photographic Society occupy all my spare time and attention. I do not feel justified in accepting any further responsibilities.

March 28th, 1891.

F. W. EDWARDS.



**North Middlesex.**—The annual dinner was held at Beale's Restaurant on the 21st ult., the President (Mr. G. Humphries, F.S.A.) in the chair. After the usual loyal toasts, the members pledged the President and Vice-Presidents (Messrs. Goodhew and Walker); the Visitors, coupled with the name of Mr. S. H. Baker; Messrs. Pether, Goodhew, and Gill, the designer and reproducers of the Society's certificate form; and the Press. The toasts were duly responded to, and the President presented to Mr. G. R. Martin, the late Secretary, a very handsome microscope, suitable for micro-photography, the gift of the members, and added to it, as a mark of his personal esteem, a high-power objective, to complete the instrument. Mr. Martin, in acknowledging the gift, said the friendly appreciation of his work accorded to him by the members had been ample reward. The President then presented to the following gentlemen the certificates awarded to them by the judges, Messrs. J. Gale and Ralph Robinson, for work shown at the late exhibition:—Silver prints—1st, J. C. S. Mummery; 2nd, W. T. Goodhew. Platinum and Bromide—1st, F. W. Cox; 2nd, W. T. Goodhew. Genre—1st and 2nd, W. T. Goodhew. Portraiture—1st, E. T. Hiscock; 2nd, F. Cherry. Enlargements—1st, C. Beadle; 2nd, W. Taylor. Lantern slides—1st, W. Taylor; 2nd, E. T. Hiscock. The evening was genially passed with music and song.—On the 23rd ult., Mr. H. Smith in the chair, a lantern-slide exhibition was held. A collection of slides lent by Messrs. Mawson and Swan were first passed through the lantern, and were much admired, and a vote of thanks was given to the firm for the pleasure their kindness had afforded. The following members then exhibited their work:—Messrs. Wall, Mummery, Cox, Smith, Chang, Marchant, Ainsley, and Gill. The slides comprised snow scenes, forest glades, woodland nooks and silent pools, mountain glens, pastoral scenes with the cattle knee-deep in the long rush-grass, the quays and bridges of busy seaports, barges with towering sails gliding placidly along the sedgy broads, solemn minster aisles, and the excited throng of the race-course, the bustle of city life alternated with quiet home scenes and sleepy villages. In every series bursts of applause were evoked by the artistic compositions, and the well-arranged masses of light and shade of some carefully arranged picture, rendered complete by the technical excellence of the work.



## The Construction and Use of Photographic Lenses.

By CLEMENT J. LEAPER, F.C.S.,

Instructor in Photography, City of Dublin Technical Schools.

### CHAPTER IV.—(Continued.)

#### TYPICAL PHOTOGRAPHIC LENSES.

*The Globe Lens.*—This consists (fig. 11) of two achromatic converging menisci, having the same radii of curvature, and placed at such a distance from each other that the cemented surfaces form the circumference of a sphere, the diaphragms being placed at the centre. The following are the data employed in the construction of this lens, expressed as ratios of the principal focus of the combination taken as 10,000:—

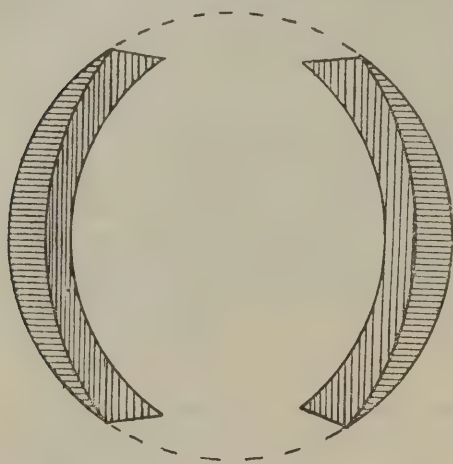


FIG. 11.

Outer radius of curvature of external crown lens	..	1,412
Inner " " " " " "	..	2,403
Outer " " " internal flint lens	..	2,403
Inner " " " " " "	..	1,620
Diameter of lenses	..	1,875
Thickness of combination at the centre	..	231.5
Distance between outside of lenses, measured along the axis	..	2,824
Indices of refraction { Crown .. 1.53		
{ Flint .. 1.60		
Specific gravities { Crown .. 2.543		
{ Flint .. 3.202		

A lens of this type is quite free from distortion, but can only be employed with apertures varying from  $f/36$  to  $f/72$ , and, besides being slow, gives a flare-spot of considerable extent.

*The Periscopic Lens.*—This consists of two non-achromatic menisci (fig. 12), whose concave surfaces face each other, the stop being between. It includes an angle of 90 deg., and is non-distorting, but its visual and chemical focus do not coincide. If, however, the visual focus be sufficiently lengthened, and the combination stopped down to  $f/60$  or over, the difference becomes negligible. A pair of crown glass menisci of  $1\frac{1}{2}$  in. diameter, and of 2 in. concave and  $1\frac{1}{2}$  in. convex focus, and separated three-quarters of an inch from each other, will form a lens of this type, capable of covering a whole-plate when stopped down to about  $f/60$ .

For larger or smaller sizes, the following data may be made use of, in which the radii, etc., are referred to the focal length of the combination taken as 10,000:—

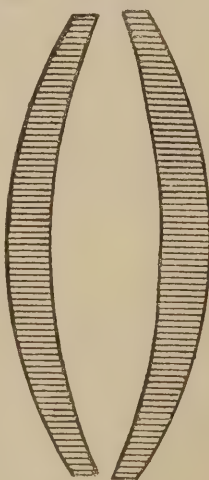


FIG. 12.

Principal focus of combination	..	10,000
Dispersive power of glass used	..	.0127
Diameter of either lens	..	1250
Radii of curvature	..	{ + 1750
		{ - 2075
Greatest distance between lenses	..	1250
Thickness of lenses	..	125

*Wide-Angle Rectilinear Lens.*—As made by Dallmeyer

this consists (fig. 13) of a pair of cemented flint and crown lenses. The diameter of the front flint and its focal length are both practically one-fifth the focal length of the combination, the radius of curvature of the concave face of the front crown being  $1\frac{1}{2}$  that of the convex face, and the radii of the front and back surfaces of the flint and crown being calculated so as to yield achromatism. The diameter of the back lens is half that of the front one, the radius of curvature of the convex face of the flint lens being  $1\frac{1}{2}$  that of the corresponding face of the front flint. The radius of curvature of the concave face of the crown lens is  $1\frac{1}{2}$  that of its convex face, and the radii of the front and back surfaces of flint and crown are calculated so that this combination shall also be achromatic. The distance separating the nearest surfaces of the two lenses equals one-seventh that of the focal length of the combination, and the stops are placed at a distance between the two lenses inversely proportional to their respective focal lengths.

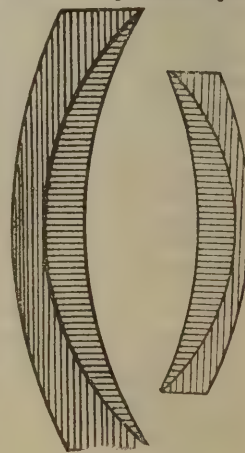


FIG. 13.

This lens is non-distorting, includes an angle of nearly 100 deg., and gives no flare-spot. It is sent out by Dallmeyer in seven sizes, having foci from  $3\frac{1}{2}$  to 17 in., and capable of covering from  $7\frac{1}{2}$  by 5 to 21 by 25 in.

*The Aplanatic Lens.*—As made by Steinheil, this consists of two symmetrical and separately achromatised combinations (figs. 14, 15, 16), placed at distances apart, and of forms varying according to the use to which the lens is to be put. The cemented lenses are in this case both made of flint instead of flint and crown (contrast fig. 17), in consequence of which astigmatism is reduced to a minimum, and there is, besides an entire absence of distortion.

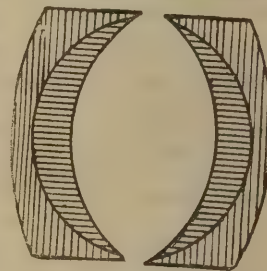


FIG. 14.

Four series of these lenses are made by Steinheil, of various rapidities, and serving different purposes.

The following are the data for making a lens of this type working at  $f/7$ , including an angle of 60 deg. and of  $9\frac{1}{2}$  in. focus:—

Front or Back Lens.		Index of refraction.
Radii of curvature.	Diverging meniscus of ordinary flint, thickness	{ + 2.472 in. }
	.098 in.	{ - 1.032 " }
	Converging meniscus of heavy flint, thickness	{ + 1.032 " }
	.185 in.	{ - 3.599 " }
Distance between lenses		.. 1.7 in.
Ratio of dispersive powers		.. 1.2436.

As actually made by Steinheil, this series includes eleven







## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

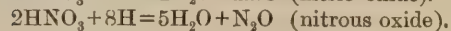
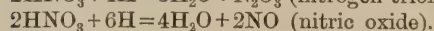
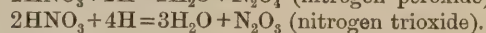
(Continued from page 187.)

WHEN gently heated with phosphorus pentoxide, nitric acid yields a white solid, *nitrogen pentoxide*,  $N_2O_5$ , which decomposes very easily and combines with water energetically to form nitric acid, thus,  $N_2O_5 + H_2O = 2HNO_3$ . Nitrogen pentoxide is therefore frequently called *nitric anhydride*.

You would observe that in Expts. 113, 114, and 115 the gas evolved by the action of nitric acid upon the metal was not hydrogen, a noteworthy difference between the behaviour of this acid on the one hand, and of sulphuric, hydrochloric, and the rest of the acids on the other hand. This result is due to the oxidising properties of the nitric acid, the hydrogen that would otherwise be liberated being oxidised to water by part of the nitric acid, which is itself reduced to water and some oxide of nitrogen. In some cases the reduction of the nitric acid proceeds still further, and its nitrogen is converted into ammonia.

EXPERIMENT 116.—Into two large test tubes put some pieces of zinc, and add some dilute sulphuric acid; hydrogen will be liberated with effervescence in both tubes. Now to one of the tubes add, drop by drop, some nitric acid previously diluted with 10 or 12 times its volume of water; observe that in this tube the visible evolution of hydrogen ceases,\* whilst in the tube to which no nitric acid has been added it continues. After a time evolution of hydrogen will again begin in the second tube, but can be stopped by the addition of a little more nitric acid. After three or four such additions of nitric acid have been made, pour the liquid in the second tube into a small dish, concentrate by evaporation, add *excess* of caustic soda, and heat; ammonia will be evolved. This ammonia is formed by the reduction of the nitric acid by the *nascent* hydrogen (compare Expt. 52) from the zinc and sulphuric acid, the reaction being  $HNO_3 + 8H = NH_3 + 3H_2O$ . Of course, as fast as the ammonia is formed it combines with the sulphuric acid to form ammonium sulphate.

It is conceivable that by the interaction of nitric acid and nascent hydrogen in different proportions we could get four oxides of nitrogen and free nitrogen itself, as well as ammonia, thus:



As a matter of fact these reactions can be partially realised, the hydrogen being provided either by the action of part of the nitric acid on some metal, or by the action on the metal of some other acid with which the nitric acid is mixed, as in Expt. 116. The extent to which the reduction of the nitric acid proceeds, or, in other words, the particular product obtained, depends clearly on the proportion between the nitric acid and the nascent hydrogen, and this is determined partly by the nature of the metal, and the ease with which it is attacked, and partly by the strength of the acid. The stronger the acid the more limited is the reduction and the higher the proportion of oxygen in the oxide of nitrogen liberated. With one and the same metal, such as zinc, we can obtain different products by using the nitric acid in different states of dilution. If a metal is attacked at all, with the strong acid the chief product is nitrogen peroxide;

\* If too much nitric acid is added, evolution of gas begins again, but the gas liberated is one of the nitrogen oxides, and is not hydrogen.

with weaker acid, nitric oxide; with still weaker acid, nitrous oxide; and with very weak acid, ammonia. The product, however, is never pure, two or three of the compounds as a rule being formed simultaneously.

*Nitrogen peroxide* can be obtained by the action of strong nitric acid on metals, by the action of heat on certain nitrates, when it is evolved together with oxygen, and in many other ways.

EXPERIMENT 117.—Heat a small quantity of lead nitrate in a dry test-tube; observe that orange-brown nitrogen peroxide is evolved and a yellow residue of lead oxide is left— $Pb(NO_3)_2 = 2NO_2 + O + PbO$ .

Nitrogen peroxide at low temperatures is a white solid which at  $-10$  deg. C. melts to a liquid which is at first colourless, but as the temperature rises becomes yellow, gradually darkens in colour, and at 22 deg. C. boils. The orange-brown nitrogen peroxide, if heated, continues to darken, and at about 140 deg. becomes almost black. The changes in colour accompany changes in the constitution of the compound. At low temperatures, when colourless, the molecules have the composition  $N_2O_4$ , but as the temperature rises they gradually decompose into simpler molecules of the composition  $NO_2$ , thus  $N_2O_4 = NO_2 + NO_2$ . The change is complete at about 140 deg., but at lower temperatures the gas is a mixture of the two kinds of molecules, the proportion of the simpler compound being greater the higher the temperature.

Nitrogen peroxide dissolves in water, forming a mixture of nitric and nitrous acids. Thus  $2NO_2 + H_2O = HNO_3 + HNO_2$ , but unless the liquid is kept cold, the nitrous acid decomposes. If the gas is passed into a solution of an alkali, a mixture of a nitrate and a nitrite is obtained,  $2KHO + 2NO_2 = KNO_3 + KNO_2 + H_2O$ .

EXPERIMENT 118.—Place a small quantity of tin (not tin plate) in a small flask fitted as shown in fig. 22. Place the end of the delivery tube in water, and pour a little strong nitric acid down the funnel tube. After some time, test the water with litmus; it will be acid. Add a small quantity of the solution to a mixture of dilute starch paste\* with a small quantity of potassium iodide; a deep-blue colouration will appear, because the nitrous acid liberates iodine from potassium iodide, and the iodine unites with starch, forming a deep-blue compound.

EXPERIMENT 119.—Make a similar experiment, but pass the gas into a small quantity of caustic potash solution. When the gas is no longer absorbed, carefully concentrate the solution, and crystals of potassium nitrate will be obtained. To prove the presence of a nitrite, add a small quantity of the solution to starch paste and potassium iodide and *acidify* with acetic acid; a deep blue colouration will appear. A nitrate (e.g., potassium nitrate) gives no blue colouration under these conditions. Try it.

*Nitrogen trioxide*  $N_2O_3$  exists at low temperatures as a deep-blue liquid; but this decomposes even whilst still very cold, giving off an orange-brown mixture of nitrogen peroxide and nitric oxide, with some undecomposed trioxide,  $N_2O_3 = NO_2 + NO$ . With water, nitrogen trioxide forms *nitrous acid*,  $N_2O_3 + H_2O = 2HNO_2$ , and hence it is called *nitrous anhydride*. Nitrous acid, however, decomposes, especially on heating, into nitric acid and nitric oxide,  $3HNO_2 = HNO_3 + 2NO + H_2O$ .

The salts of nitrous acid, i.e., the *nitrites*, are more stable. Potassium and sodium nitrites can be made by the action of heat on the nitrates.

\* To make starch paste: Grind a small quantity of starch with some cold water, and pour the white liquid into a larger quantity of boiling water, and boil until the starch becomes transparent. Sufficient water must be present to make the solution quite limpid when cold; and it must be quite cold before being used.



EXPERIMENT 120.—Heat some potassium nitrate very strongly in a test tube, test with a glowing splint, and observe that oxygen is given off. After some time allow to cool, dissolve the residue in water, and test for a nitrite by adding some of the solution to starch paste and potassium iodide and acidifying with acetic acid,  $\text{KNO}_3 = \text{KNO}_2 + \text{O}$ .

Most of the nitrites are soluble in water; silver nitrite only dissolves to a small extent.

EXPERIMENT 121.—To a strong solution of potassium or sodium nitrite add a strong solution of silver nitrate; silver nitrite will precipitate as a yellowish crystalline substance. Warm the liquid gently until the precipitate dissolves, and allow to cool slowly. The silver nitrite will crystallise in slender needle-shaped crystals.

Under some conditions, *e.g.*, if heated with carbon, or mixed with ferrous salts, nitrites are oxidising agents; under others they are reducing agents.

EXPERIMENT 122.—Acidify a solution of potassium permanganate strongly with sulphuric acid, and add a solution of sodium or potassium nitrite. The purple colour will be completely discharged, the nitrite being oxidised, and the permanganate being reduced. If some of the gas in Expt. 118 is passed into acidified permanganate, or some of the solution of the gas is added to it, the colour will be discharged,  $2\text{KMnO}_4 + 3\text{H}_2\text{SO}_4 + 5\text{HNO}_2 = 5\text{HNO}_3 + \text{K}_2\text{SO}_4 + 2\text{MnSO}_4 + 3\text{H}_2\text{O}$ .

(To be continued.)

## Photo-Micrography.—VII.

BY ANDREW PRINGLE.

### DEVELOPMENT.

WE now come to an operation to which my method of treating this subject has given even greater importance than usual; for, as will be remembered, I said that the best criterion of exposure is the appearance of the plate under development.

The developers which I chiefly recommend are the hydroquinone, or quinol, and the ordinary pyrogallol and ammonia. Hydro has the advantages of great "clearness" and power of density, which in our work are advantages not lightly to be overlooked. When from the nature of the subject it is desirable to avoid great contrast, and to get a negative full of gradation, then I use and recommend pyro and ammonia; and while one worker will as a rule require one class of result, another may need a different, according to the subjects with which each has to deal.

For pyro and ammonia I make the usual 10 per cent. solutions of these two reagents, and a similar solution of ammonium or potassium bromide. The pyro may be preserved with sodium sulphite or potassium metabisulphite, according to any approved formula and to taste. I use the hydro formula given by Messrs Thomas and Co., but I dilute it with one or one-half measure of water, according to the nature of the subject. Low-power work and thick or heavily stained objects are as a rule better rendered with the pyro developer; while, generally, weakly stained or unstained objects come out better after hydro treatment of the negative; but these are generalities and not rules.

For the pyro developer the following proportions will answer in ordinary cases:

Pyro	..	..	..	..	2 gr.
Ammonia	..	..	..	..	2 to 3 minims.
Amm. or pot. bromide	..	..	..	..	$\frac{1}{2}$ to 1 gr.
Water, to	..	..	..	..	1 oz.

Those who are in the habit of using a carbonate in place of the liquor ammonia may very well use their favourite alkali; in fact, it has the advantage in the matter of clear shadows, which is often important in our work. The following will do for such a developer:

Pyro	..	..	..	..	3 gr.
Sod. carb.	..	..	..	..	10 "
Water	..	..	..	..	1 oz.

to which half a grain of soluble bromide may be added.

First it should be remarked that if we are using colour-correct plates we must look well to our window or lamp-glass, for yellow will not do for these plates, or rather it *will* "do for" them! The light must be ruby.

I do not recommend "tentative" development for this work, because one of the chief points according to my teaching is to judge of exposure by the effect of a given developer; and moreover it is generally easy to repeat an exposure that has proved erroneous.

We begin to develop, then, with the full strength as given above; and we watch very carefully what happens when the developer begins to act and when the image first begins to appear. If the image does not put in an appearance within a minute or so—the exact time will be learned by experience—it may safely be judged that the exposure has been insufficient.

If the image begins to appear within a few seconds after the application of the developer, and if it comes up grey and without pluck, then, as all know, it is certainly over-exposed. A negative of a subject full of contrast will probably show some of its image-details more quickly than a negative of an object without strong contrasts, but experience will lead to correct judgment of this also.

I may say that if any part of a plate develop *dense* black at any part of the operation, that plate is almost certainly under-exposed; no part of a negative during development should appear extremely dense or black. On the other hand, the whole of the image should not appear grey or of nearly one tone, for this is almost surely a proof of over-exposure. As to the rapidity with which the details should follow each other into sight in development, a good deal depends on the nature of the subject. There must be no lagging of appearance, especially if the object is one with strong contrast; nor must details rush up one after the other, especially if the object is a thin or little-contrasted one; the first would show under, the second would show over exposure. Details should follow each other gradually, steadily, unceasingly, till they are all visible, not necessarily distinct from one another, but still *there*. After details are all "up," some little time is needed for acquisition of density—that is, if the plate has been sufficiently exposed. If the plate has not had enough of exposure, some parts of the plate will have too much density by the time all details are visible. If the exposure has been grossly in defect, the plate will not take density in any part; if the exposure has been a little too long, the plate will turn black all over, or nearly all over, very soon; if it has been a great deal too long, the image will at once become grey and will refuse to show signs of density, however much we may prolong the development.

To recapitulate briefly—

Soon after the image has begun to appear—

Dense black all over means slight over-exposure.

Grey all over means great over-exposure.

Instant flashing up means utter over-exposure or fog.

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



The image not appearing for a minute means under-exposure.

High lights grey, shadows wanting, means great under-exposure.

High lights dense black, shadows dirty grey, means slight under-exposure.

"High lights appear after 15 to 30 seconds, grey at first gradually darkening, shadows creeping up steadily all the time; finally high lights, black, and shadows ranging from pale to dark grey—correct."

With regard to the necessary amount of development, much depends on the nature of the subject. For example, a subject presenting violent contrast of detail—whether the contrast is due to density or to colour—will not need to be developed to such a point of density as a subject of delicate gradations. But, on the whole, a micrographic negative should be developed to a further stage than a negative of a landscape or of a portrait, especially if there is any chance of the negative being required for "process" printing. I may tell the young photomicrographer that one never knows when our scientific friends will discover beauties in our work that we never should have discovered for ourselves!

After development, our negatives require no unusual treatment. They are washed and fixed as usual, and after fixing, it is well to give them an extra good washing, for it is not unlikely that they may need some after-treatment and reduction or intensification; and moreover, I do not advise varnishing of micrographic negatives, for the danger of loss of an amount, however slight, of sharpness.

We are told that neither intensification nor reduction alters the proportional density of the silver deposit in a negative, and this seems to be fairly accurate. But we can most emphatically alter the *printing proportions* of our negatives, or the "values," if I must use a fine-sounding word; and after all, that is what we require and expect when we intensify or reduce. We find after development that we have a negative full of details, but the negative will not yield a reasonably plucky print. Then we intensify it. Or our negative is very dense all over and takes a very long time to print, and prints very black and white; then we can with ease and certainty reduce it.

For intensification nothing acts better than the ordinary mercuric chloride, in saturated aqueous solution, followed after washing by a weak solution of sodium sulphite. We must take great care to let the latter solution act till the image is brown *right to the back of the film*; many negatives are lost by neglect of this precaution, for such negatives go wrong after a time to a certainty. Weak ammonia may be used in place of sulphite, and gives even greater additional contrast and density, but when a negative requires a very great reinforcement it is usually better to try another exposure.

Before intensification the negative should be treated with acid alum, the acid being preferably hydrochloric; and a little of that acid should be added to the saturated solution of mercury.

I almost always use Mr. Farmer's reducing solutions of potassium ferricyanide and hypo, and the system works to my satisfaction. The action must be carefully watched, for fine details must not be endangered.

(To be continued.)



**Erratum**—Our correspondent, Mr. C. H. Freeman, says:—"In printing my reply to No. 4577, 'Electric Light for Dark-room,' an error has crept in which makes the answer seem rather ridiculous. Instead of, 'But if he only requires it for about two minutes at a time,' as printed, it should be, 'But if he only requires it for about twenty minutes at a time.'"

## Photographic References.

By MAJOR J. FORTUNÉ NOTT.

### DEVELOPMENT.

(Continued from page 209.)

ANOTHER feature regarding this important subject of development, which must at first tend to cause considerable confusion in the mind of one who is just beginning the practice of the fascinating art of photography, is the number of developers which he will find are available for his purpose. And on a closer examination of the subject not only will he find that he has a wide choice of the chemical mixtures known in photographic parlance as developers, but that the variations that can be rung upon the amount of their constituent elements, as recommended by the various guides on this subject, add largely to the puzzling question which he has to solve. The best advice that can be given anyone so situated is to work with the formulæ recommended by the maker of the plates he has been using, and to continue doing so until he has gained that amount of practical experience which will justify him in experimenting with the various other forms of developers, in order to acquire the information which is essentially necessary for everyone ambitious to excel as a photographer, namely, the developer which will in his hands yield the best results. Meanwhile, any knowledge he can acquire respecting the action of the chemicals he will have to use will be of assistance to him in detecting the weak or strong points in the various formulæ which will come under his notice.

In order, therefore, to assist him in this object, it now comes in order to enumerate in as concise a manner as possible the various developers which are at present favoured by photographers, and to give some information regarding their chemical compounds.

These developers are known under the following names: The pyro developer, ferrous oxalate developer, hydroquinone and eikonogen developers.

Referring to the first and most important of these developers whose chief constituent is pyrogallol acid. This compound is sometimes called "pyrogallol," which would appear to be a more correct name for it than pyrogallol acid, for as a matter of fact, it does not possess any of the characteristic properties of ordinary acids, hence should not be associated with them even by name. It is produced from gall-nuts or gallic acid, and is one of the most powerful reducers which is now known to photographers. A solution of pyrogallol without any other addition will develop the image upon an exposed plate, but its action is so slow and its staining capabilities so considerable, that under ordinary circumstances this method of procedure is not a practical one. Its action has, therefore, to be stimulated to the requisite speed, and this is done by the addition of a certain amount of either of the following alkalies: ammonia, soda, or potash. The effect of using either of these ingredients with pyro in the prescribed quantities, or of using any two of them in combination in the same way, is so marked that they are called by photographers "accelerators."

Pyrogallol when in solution very quickly oxidises and becomes discoloured on exposure to the air, especially if the water employed for the purpose contains any impurities. Distilled water should therefore be used whenever possible, not only for making this solution but all others which have to be made for photographic purposes. Pure chemicals and pure water are essential for good results in the developing-room. If distilled water cannot be procured, then the water should be thoroughly boiled, and allowed to cool before being used. *Propos* of this subject the attention of photographers was called some time ago to the fact that Salu-



taris water was simply distilled water aerated, and therefore when procurable, supplied their requirements in this direction.

Mixing the solution with distilled water is, however, not the only way in which the photographer can preserve the purity of the pyro, when in use, and so extend the time that its action will remain sufficiently energetic for his purpose. An additional preservative is found in the salt known as sulphite of soda. A certain amount, generally about the proportion of 4 of sulphite to 1 of pyro, is added to the solution. It restrains to a certain extent the action of the developer, but its most useful power lies in its capacity for preserving the pyro solution in proper condition for a considerable length of time, and when the complete developer is mixed and being used will prevent it from so quickly discolouring as would otherwise occur. It moreover tends to prevent the plates getting stained—a feature of alkaline pyro development of frequent occurrence when sulphite of soda is not added. It is, of course, quite possible to dispense with its use, and so limit by one the chemicals to which a photographer has to resort, but in such an event the pyro must be kept dry, and not made into a solution. With experience this is, perhaps, the best method of development, for more reliance can be placed upon the strength of the ingredients forming the developer, but for the ordinary requirements of the average amateur the pyro solution with the preserving influences of the sulphite is doubtless the most practical way it can be used. And after all it may be questioned whether it is not the most simple method, for with dry pyro and no sulphite, not only stained plates but stained fingers in a superlative degree will more often result than not, and so necessitate clearing baths and other messes whose use in the other event can by care be easily obviated. The colour of the resulting negative is also a feature worthy of some consideration, especially in the dull days of winter when speed in printing may be a matter of some importance, and the use of sulphite will in this respect be found a distinct gain in the generality of cases.

Sulphite of soda is, however, one of the most unstable chemicals with which the photographer is brought into contact, for on exposure to the air it deteriorates rapidly by absorbing oxygen, and forming the compound known as sulphate of soda, which is a very useless adjunct to any developer. Care must therefore be taken to buy sulphite of soda from a perfectly reliable chemist, and to use it as soon as possible after the bottle has once been uncorked. With care it can be preserved, but the best method of procedure is only to buy it in the exact quantities required for the solutions being prepared. It should be in crystals, with each one appearing clean, and showing no signs of white powdery deposit on the surface. If the lumps exhibit any signs of deterioration, reject the sample or make the chemist test it with hydrochloric acid and barium chloride.

In this country many photographers of extensive experience prefer the developers made with ammonia to those made with any of the fixed carbonates which are more largely favoured on the Continent and in America. Ammonia in skilled hands has undoubtedly some advantages, but it also has many drawbacks. Certainly it is not a developer the writer would recommend for a beginner to commence practising with. Its advantages are that it acts quicker in forcing out detail than soda or potash, that it produces clear-coloured negatives with a wide range of gradation, and for purposes of transport occupies comparatively but little bulk. Its disadvantages are more numerous. Ammonia loses strength rapidly every time the bottle containing it is uncorked, consequently no certainty can be placed upon it in this respect without subjecting it to a test; its odour is objectionable and unhealthy; there exists a certain amount of danger in its use if carelessly

handled before dilution, and many plates that will yield perfect negatives when treated with any other class of developer will not stand ammonia. Again, a serious drawback to its use by unskilled operators lurks in the fact that it has a much greater tendency to produce every kind of chemical fog than any of the fixed carbonates. If, therefore, among the numerous formulae that are open for selection one containing ammonia is chosen, it must be remembered that it has to be handled with much greater care than is requisite with potash or soda, and that when "forcing" is necessary, the plate should be given time, in preference to the method necessitating an increase in the quantity of the accelerator beyond the normal limit.

(To be continued.)

## Eikonogen Compared with Hydroquinone.

By M. H. REEB.

IN our issue of February 20th, we published the précis of an article by M. Reeb on hydroquinone, and we now give the summary of a later paper by him upon eikonogen.

Whilst hydroquinone oxidises in the presence of an alkali, eikonogen oxidises without alkali in the neutral and acid state, and also very rapidly with alkalis. Weight for weight the oxygen absorbent power of eikonogen is one-fourth that of hydroquinone. "The salient points of eikonogen, from a photographic point of view, are its great avidity for free oxygen, its property of reducing the salts of silver in an acid liquid, and the insoluble salts of silver with the aid of an alkali, and by the mere addition of sulphite of soda." It is evident then that eikonogen gives two kinds of developers (1) alkaline developers; (2) simple developers with the addition of sulphite only, and M. Reeb gives the result of his experiments in both directions.

(1) Determination of the reducing power of eikonogen. This was determined in the same way as for hydroquinone, and the result was 0.33 grammes of eikonogen just reduced 1 gramme of nitrate of silver.

(2) Determination of the quantities of alkalies and of their carbonates, corresponding to a given quantity of eikonogen.

The quantities were found to be exactly the same as for hydroquinone, viz. :—

Potassium hydrate (caustic potash) ..	0.33	gram.
Sodium " (caustic soda) ..	0.2353	"
Potassium carbonate .. ..	0.4064	"
Sodium " .. ..	0.8411	"

Therefore the above quantities of alkalies should be added to .33 grammes of eikonogen.

(3) Determination of the quantity of sodium sulphite necessary for the perfect working of the developer.

This was also determined in the same way as for hydroquinone, and the following results were obtained :—

(a) That if eikonogen be added to an alkali or alkaline carbonate, the quantity should be the same in both cases, viz., ten times the weight of eikonogen.

(b) If eikonogen is used without alkali, the proportion should be five parts of sulphite to one of eikonogen.

M. Reeb winds up by stating that in his opinion there is no doubt that hydroquinone is far superior to eikonogen, and gives the two following formulae for comparison :—

1.

Hydroquinone .. ..	8.0	gram.
Sodium sulphite .. ..	40.0	"
Potassium carbonate .. ..	40.0	"
Distilled water (e.g.) .. ..	1	litre.



	2.	
Eikonogen .. ..	33 gram.	
Sodium sulphite .. ..	330 "	
Potassium carbonate .. ..	40 "	
Distilled water (e.g.) .. ..	1 litre.	

## Exhibitions.

### LIVERPOOL INTERNATIONAL PHOTOGRAPHIES.

#### No. IV.

(By Our Special Correspondent.)

THE public appreciation of the Liverpool show is proved in the fact that upwards of 30,000 people will have passed the turnstiles; the function which was to have run a month has been extended to over five weeks, and, all round, the success of the exhibition has far exceeded what it was expected to be. Last Saturday was a very big day, as was last Monday. On Monday two large audiences, in addition to those in the exhibition proper at the Art Gallery, attended at the Rotunda Lecture Hall adjoining, to hear "Iceland," by Mr. Paul Lange, and "Ober-Ammergau," by Mr. W. Lamond Howie. Needless to say, both lectures were received with enthusiasm. Extra "shows" also were given.

During this week promenade concerts will be given daily, and lime-light demonstrations.

#### PICTURES (CONTINUED).

Turning to the pictures again, I resume at Class XXII., 776 to 798; hand-camera work; 5 in. by 4 in. and under; street scenes, town life, country scenes, animals; set of six pictures. This is one of the best contested and most commendable classes in the show, and is contributed to by some two dozen workers. John White takes the silver medal with No. 787, his studies being (1) "Abandoned," (2) "Going to the Fair," (3) "An Interloper," (4) "On Grand Canal," (5) "Haymakers," (6) "For Liverpool" Major J. D. Lysaght, in 777, shows a nice half-dozen, as does W. H. R. Henry in 778, though the tone of the latter are a little "off." They are an exceptionally good set, however. W. D. Welford's 780 are good, and A. R. Dresser's 781 are excellent. All Mr. Dresser's are a nice even colour, but the blue mount detracts from the effect. Mr. J. Milman Brown has very creditable animal pictures in 779. Cecil Shadbolt's six views at Inversnaid, Loch Lomond, 783, are prominent, as are 784 by A. W. Gottlieb, and 785, by E. A. Councell. J. Catto has chosen six good subjects in street scenes, 788, and has worked them out exceedingly well. Mr. A. F. Stanistreet's No. 791 and Henry Lupton's 793 are good, and A. Grillon shows up well with 794. Other excellent work is exhibited by H. Wilkinson in 797, and W. Tomkinson in 798. Mr. Tomkinson's 2, 5, and 6 are particularly to the fore. The geese are, perhaps, the best study in Mr. Wilkinson's set.

In Class XXIII.—804 to 817, hand camera work, 5 in. by 4 in. and under; marine scenes, clouds, waves, sea-side work; set of six pictures—there is also exceptionally good work shown; fourteen competitors contribute. A. G. Bristow with 805, and J. M. Nicholson with 811, are bronze medal workers; both gentlemen exhibit good marine studies. In 804 A. R. Dresser has a capital six, and then A. F. Stanistreet comes with a really handsome set in fog, which comprises marine and cloud effects. In the opinion of many people this latter competitor was most unfortunate not to secure an award with this half-dozen pictures. The only point against them, I believe, was that they were in oval mounts. Nos. 807 by C. A. Timmins, 808 by W. H. R. Henry, and 810 by W. D. Welford are very commendable, and No. 814 by the Rev. C. F. L. Barnwell are very creditable. In 817 H. Wilkinson shows more excellent studies, but not so well as he can do at his best.

Class XXIV.—818 to 820, hand-camera work; games, races, or other sports; set of six pictures—is made up by three exhibitors and is the smallest class in the exhibition. W. D. Welford gets the bronze medal with No. 819, which include: (1) "Tennis," (2) "Cricket," (3) "Acrobats," (4) "Skating," (5) "Skating," (6) "Tight Rope Walking." In 818 John Woolfall has six splendid studies of tennis, exceptionally good, but, like other exhibits, seemingly passed over because of the mounts, which in

this case are two cream screen fans, a trio of pictures on each. W. Tomkinson exhibits another good set in 820.

Class XXV.—825 to 840, instantaneous work; half-plate and under; any subject; set of six pictures—is made up of the work of fifteen exhibitors. The studies reach a high level both for selection and execution. Karl Greger is awarded the silver trophy with 837, a very good six. Nos. 827, H. Harvey George, and 828, Louis Meldon, are excellent, a wave in Mr. Meldon's frame not being quite up to the mark. No. 831, Charles Reid, is another meritorious half-dozen. Charles Scolik in 825, Joseph Scholefield in 832, and other workers are fairly represented.

#### APPARATUS (CONTINUED).

Messrs. Horace Lewis and Company, Bold Street, Liverpool, show, among other novelties, the "Demon Rocker," which in development presents a "dead centre," the largest lens, 18 in. by 20 in., in the Exhibition; some specimens of Kallitype; and several cameras, among which are the "Guinea Detective," the "Magazine Camera," "Stereoscopic Hand Camera," "Stereoscopic Camera," Griffith's Patent "Lantern Slide Camera," "Fixed Enlargement Camera," and the "Optimus." A patent magazine, carrying twelve plates, is attached to the "Magazine Camera," which can be used in lieu of dark slides. Another feature is that the inner shelf of the magazine can be removed and changed for a duplicate in such a way as to obviate the necessity of a dark-room. The price of the changing bag is £2 2s.

Mr. James Thompson, Lintmill, Port Gordon, shows an improved "Scotia Camera," and the "Balancing Camera" of new design. The latter extends equi-distance backwards and forwards, so that a perfect balance is secured on the tripod. This arrangement tends to considerably reduce the usual vibration experienced when using long-focus lenses. The range of extension is great—from about three times the longest side of the plate, down to that required for short-focus lenses. The "Balancing" camera is about the same size as the "Scotia" when closed, and is light and portable.

## Notes from Paris.

THE French astronomers are contemplating a gigantic project in which photography is to take the most important part. This is nothing less than a huge photographic map of the entire heavens. Early next month fifty-six astronomers, representing eighteen observatories situated in different parts of the world, will meet at Paris to arrange the details of the scheme. France is represented by four observatories,—Paris, Bordeaux, Toulouse and Algiers; England will have two—Greenwich and Oxford, and Capetown, Sydney and Melbourne amongst her colonies; and there will also be scientific men from the observatories of Helsingfors in Russia, Potsdam in Prussia, the Vatican and Catania in Italy, San Fernando in Spain, Tacubaya in Mexico, Rio de Janeiro in Brazil, Santiago in Chili, and La Plata in the Argentine Republic.

It is proposed that at all these points a series of photographs of the entire heavens shall be taken on some fixed date, or rather dates, for it is calculated that each plate will include about 4 deg. of the sky, and that therefore about 10,000 plates will have to be taken. But as there are to be two series of photographs, one instantaneous and the other long exposure, there will be over 20,000 plates—and what is far more difficult—to be classified, arranged, and mounted.

It is expected that the instantaneous photographs will show about a million and a half stars, and the long exposure plates will reveal from 15 to 20 millions, for the camera can detect thousands of stars, where a good telescope can only find hundreds, and the "undressed optic" can but see tens.

When these photographs have been all taken, and forwarded to Paris, they will be mounted by the astronomers of the Paris Observatory on two huge globes each about 70 ft. in circumference.

Sylvain Dornon, the shepherd of the Landes who is making a journey from Paris to Moscow on stilts, has been the object of much attention on the part of amateur photographers, both at starting and whilst on his road. At least three "snap shots" were taken at him as he left the Place de la Concorde, and he has not escaped the provincial and German cameras which have been turned on him between Paris and Cassel, where, according to last accounts, he had arrived.



## THE LONDON STEREOSCOPIC AND PHOTOGRAPHIC COMPANY, LIMITED.

THE sixth ordinary general meeting was held last week at 106 and 108, Regent Street, W., under the presidency of Mr. Howard J. Kennard, the Chairman of the company.

The Chairman said: Gentlemen, the few remarks I shall have to make to you to-day, I think will all be of a very favourable character. Last year, if you remember, we met in this room for the first time, and the shops and show-rooms were then barely finished, and not furnished. We did not find much advantage from our alterations before the month of June. In the months of April and May we were in a transition state. Our rooms were all upset, and we found that the trade, although it went on about as usual, showed no increase, but after May, forward to the end of the year, we found a very marked improvement in our trade, which I must think was caused by the money that has been laid out on this property, and in making the establishment of the Stereoscopic Company, I think I may say without egotism, the finest photographic establishment in the world. Undoubtedly, a large sum of money has been spent on it, but the directors confidently anticipate that the interest on the money will be quite covered by your extra receipts. However, I told you on the last occasion that there was no option with us: we were turned out of the buildings on the other side of us, and therefore it was necessary for us to take these premises. The leases that we bought from the former owners run up to the end of the Crown lease, so at the end of the lease we become tenants of the Crown. I may tell you that the returns this year have been eminently satisfactory to your directors. I may say that the improvement all took place in the last six months, although we had to pay interest on the money for the year. I look forward that with increase of trade, and with the increase of our mechanical printing arrangements, that this will be an exceptionally good year. The shop you see downstairs and the room you are now in I think could not be better, and the lift also, which takes the sitters up to the operating rooms, has had an exceedingly good effect. Ladies attending Court can come into the building by a private door in the side street, and can be taken straight up to the operating rooms without the necessity of changing their dresses. Now as to the staff. I am happy to say that we have a very excellent staff at this establishment, and that it would be impossible to find a more efficient one than we have. They all work cordially together, each department assisting the other in every way that can be desired. Now as to the commercial department. In the mechanical printing we have been printing from three machines. Those three machines—you will remember on the last occasion that we showed you a number of proofs produced on them, and which were left on the table for you to take away—those three machines we have had in operation during the whole of last year, and we found that the business was so enormously increasing that we have added to the building in which they are, by putting on three stories instead of two, and we have purchased three more machines from Germany, and we are now assured by the manager of that department that there would be no difficulty whatever in keeping those six machines constantly going. That will mean a very large increase in our receipts. With these remarks I beg to move the adoption of the report, which you will see recommends a dividend of 5 per cent., and

Mr. William Clarke (director) seconded the resolution, and expressed his gratification that the company possessed such a valuable manager as Mr. J. L. Mitchell. In his opinion they could not have a better representative than that gentleman.

Mr. M. Blankley then proposed, Mr. Cuthbertson seconded, the re-election of the retiring directors, Messrs. Howard John Kennard and Malcolm A. Laing, which was carried.

The Chairman returned thanks on behalf of himself and colleagues, and stated that the position occupied by himself and his co-directors was different from that of ordinary directors in a commercial concern, because they were such enormous shareholders, and he assured them that the affairs of the company were now looked after with even closer attention than was the case when it was a private firm. It would be their endeavour to continue to promote in every way the interests of the company, which would be as much to their own interest as to that of the shareholders.

The Chairman said that he now wished to have the pleasure of being allowed to propose a cordial vote of thanks to the

general manager and staff of the London Stereoscopic and Photographic Company. As he said before, nothing could be more satisfactory than the way in which they all did their work. They had an indefatigable worker in their general manager (Mr. Mitchell), and he thought it only right that his services, and the services of the secretary (Mr. S. M. Clarke), and of the heads of departments and staff generally should be recognised, and that the meeting by a formal expression of thanks should show that it was satisfied with the zeal and energy displayed by those gentlemen in their interests during the past year.

Mr. William Clarke seconded the motion, which he stated met with his entire approval, and he could only endorse the remarks of the chairman as to the valuable services rendered by those gentlemen during the past year.

The motion was carried, and the Chairman requested the general manager to convey the expression of the shareholders to the heads of departments. Subsequently several parties of shareholders and pressmen made a tour through the various studios under the able guidance of Mr. Mitchell and Mr. T. Bastin, and much satisfaction was expressed at the completeness with which everything connected with the art of photography was carried out.



## NEW PREMISES OF MESSRS. ADAMS AND CO.

WE have lately paid a visit to the admirable show-rooms of Messrs. Adams and Co. in Charing Cross Road, underneath the new habitat of the Camera Club. The photographic trade has prospered very considerably during the last five years, and dealers are pushing westward. Messrs. Adams and Co. showed themselves to be men of business enterprise when they made a bid and secured the splendid ground floor of the Camera Club buildings, which they have fitted up and finished in a manner reflecting credit upon the management, and which will, in connection with the extensive stock of apparatus and material, secure for the firm an extensive patronage. We saw several novelties, and were promised the sight of others on a future call. The first presented to our notice was the new 1891 pattern "Ideal" hand-camera, which presents several important improvements on the previous one. The lens is now one of a new series of English-made lenses that Messrs. Adams and Co. are introducing under the name of the "Club" series, and we shall give a more detailed report on these at some future time. The lens covers perfectly at  $f/8$  and is of 5 in. focus. The shutter is one specially designed for this camera by Mr. Newman, and it possesses several features which are quite new. It can be worked as a time shutter or is arranged to give any exposure from one-fourth to the one-hundredth of a second, and the duration of exposure is not regulated by any leather or india-rubber break, which is so liable to get out of order, but by Newman's well-known pneumatic regulator; it has only one movement across the diaphragm slot, and immediately after the exposure has been given, the lens is automatically covered and the shutter re-sets itself, and is again ready for another exposure, so that there is no chance of the plate being light-struck during the re-setting of the shutter. Another ingenious and useful idea is the combination of the lens cover with the finders' covers, so that it is perfectly obvious that one cannot release the shutter and change the plate and then find that the lens was not uncovered. Special guides have been provided in the interior of the camera to prevent any possibility of a plate sticking, which is effected, as in the last model, by merely pulling down a lever and pushing it back. An indicator at the side of the camera shows at once how many plates have been exposed. The levers actuating the shutter and for changing the diaphragm or plate are all at the bottom of the camera, so that there are no obtrusive knobs or projections apparent.

Another new hand-camera, "The Adams," has just been perfected. These have at present only been made to order. They have many novel points which we may again refer to. We also received a general outline of a new tripod, which, as our informant said, "will be a revolution in tripods," and, judging from what we heard, we can quite endorse this opinion. A new lantern-slide-making camera, and a new developing sink and stand at a very low price, are also promised. The force of invention can surely go very little farther, for in the "Club" camera we have as light and as elegant an instrument as anyone can wish to handle. The



one we examined, half-plate size, is the lightest and most compact camera we have yet seen, and is very easily and quickly set up, and is provided with an arrangement so that wide-angle or long-focus lenses can be used, and a turntable with special cam lever locking arrangement which prevents any shifting when once the subject is arranged on the focussing screen. At the same time the instrument is very firm and rigid, and is of first-class wood and workmanship, and we noted also that nearly all the working parts were of brass and metal worked on metal, thus ensuring perfect firmness and holding power.

It is, of course, quite impossible for us to give any idea of the magnitude of the stock or variety of apparatus to be seen. Doubtless Messrs. Adams and Co. will make these known through our advertising columns. Still, we should advise those of our readers who want anything for the coming season not to fail to pay these new premises a visit, and many will find them handy, being only about five minutes' walk from Charing Cross.

## Round and About the Clubs.

### CROYDON CAMERA CLUB.

BRAITHWAITE HALL, Wellesley Road, on the premises of the Church Institution, is only two or three minutes' walk from East Croydon station. It is an admirable hall for a photographic exhibition, and in an excellent position for a society's meetings. The use of this hall the Croydon Camera Club has secured for itself, and on Tuesday, Wednesday, and Thursday the annual exhibition of members' work was held there, and to it between 200 and 300 prints were sent in, ranging in size from quarter-plate to an enlargement 24 by 19½. There were, however, only three classes: one for the AMATEUR PHOTOGRAPHER Silver and Bronze medals; one for architecture; and one for general work for the society's medal.

The society is young, and under the circumstances extraordinary work was not to be looked for, and yet there was in much of the work evidence of taste and no little skill in manipulation, but, on the other hand, more than one print showed unmistakably signs of careless trimming and mounting. In Class A, for general work, the medal was taken by Mr. G. Corden, the print being the enlargement of a fine snow scene, called "The Bridle Path, Beddington;" its size was 15 by 12, and it was very delicate and artistic. Mr. G. H. Elliott's print of "Arundel Park" was highly commended, whilst "Waiting to be Fed," a picture of swans by Mr. Blow, was commended; both prints showed careful work. An enlargement of the "Waterfall at Virginia Water," by Mr. White, was deserving of notice, as was also a print of some orchids by Mr. Isaacs. Besides his prize picture, Mr. Corden sent in several other prints and enlargements, notably a "View from Addington Hill," and "Rodney Weir," the exposure of the latter being exceedingly well timed. Mr. Maxey's enlargements of a view at "Beddington" and "Godshill Church, Isle of Wight," were very creditable, as was also his portrait of a boy. Mr. White was very successful in his copy of an oil painting, "The Translation of Moses." Mr. Isaac's enlargements, "Crysanthemums," showed very delicate work in the flowers and vase, but was quite spoilt by the cloth covering the table on which the vase stood.

In Class C, general work for the AMATEUR PHOTOGRAPHER medals, the first prize, silver, was taken by Mr. H. Maclean, by a picture called "A Surrey Stream," and it was really the best picture in the exhibition, composed of soft whites and greys with sufficient black to obviate the charge of flatness or monotony. It was almost Emersonian in treatment, and strongly reminded one of the doctor's earlier works. Another picture by the same gentleman, "A Surrey Mere," was prevented by the rules from taking second prize, or it would have done so. Mr. C. E. Whittaker took second place with a photograph of a St. Bernard, "Serenio," though, possibly, visitors to the exhibition may think there were other pictures more deserving of the honour. Amongst the other pictures sent in by Mr. Maclean, were "The Mole, near Letherhead," "Brockham Bridge," and "A Gateway, Rye," the latter taken, unfortunately, with a wide-angle lens. In this class there were two curious little prints—one by Mr. G. P. Waters, "The Wandle, Carshalton," and the other by Mr. Maclean, "Conduit Lane," and whether the workers were striving after "naturalistic" effects or suffered from an accident, we could not absolutely determine, but

had the prints been sent in by any other persons we should most certainly say that the paper had slipped in the printing frame. Mr. H. A. Sargeant sent a charming little picture—"In the Courtyard, Hever"—which shows a stone archway, through which a fine view of the distant country is seen. Mr. Whittaker contributed a picture—"At Limpsfield, Surrey"—which was on gelatino-chloride paper, and had apparently been so overtone in the sulphocyanide bath that it was a fine chrome yellow in colour. As a curiosity it was fine, but as a print for competition, well, the less said the better. Amongst the other pictures in the class worthy of notice were: "Croydon Old Town," by Mr. H. B. Larkins; "Still Waters," by Mr. Isaacs; and "Cygnets," by Mr. E. F. Blow.

In Class B, architecture, the competition was not keen. Each competitor had to send in a set of not less than four prints, and the views sent in seemed confined to pretty much the same neighbourhood. The medal was taken by Mr. Isaacs with four views: an interior of Lingfield Church, showing old blackletter Bible chained to the reading desk; another view of the interior; view of the exteriors of Betchworth and Beddington Churches.

Amongst the exhibits not for competition was a magnificent enlargement—a girl's head—from half-plate to 24 by 19 by daylight, by Mr. Isaacs; an enlargement of a view of "Chiddingstone," by Mr. Maxey; a set of "Views on the Lagan," by Mr. Plimmer; "A Trout Pool," by Mr. Maclean; a large portrait of Mr. Maclean by Mr. F. J. Palmer; and a "bunch of marguerites" by Mr. Maxey.

There were also some lantern-slides, very varied in value, sent in for competition, but at the time of writing the awards had not been made. Each evening there was a lantern show and an attractive musical programme, and altogether the exhibition was a great success, on which the Society is to be heartily congratulated, as is also Mr. Maclean to whose energy and ability much of the success was due.

**Survey of Glamorganshire.**—The Committee of the Cardiff Free Library and Museum having determined to form a collection of photographs of objects and places of interest in the county, the Cardiff Photographic Society has commenced a photographic survey of the county, and has already sent in several hundreds of photographs. The Library Committee, to further encourage the scheme, have offered gold, silver, and bronze medals for the best collections of photographs sent in under the following rules: 1. Each exhibit must consist of at least twelve pictures; 2. All pictures must be framed, or mounted on cards or in books. The subject, date when taken, and exhibitor's name to be written on the front of the mounts; 3. The Committee will not be responsible for accidents to or loss of exhibits; 4. Silver prints will be eligible for competition, but photographs printed in a more permanent process, such as carbon or platinotype, will receive greater consideration; 5. All pictures exhibited shall become the property of the Free Library Committee. Exhibitors shall, however, have liberty to furnish duplicate unmounted prints, when their exhibits will be returned; 6. The judges shall have the right to withhold awards, if, in their estimation, the exhibits are not of sufficient merit to deserve recognition. Exhibits must be sent to the Cardiff Photographic Society, Public Hall, Queen Street, Cardiff, not later than August 7th 1891. Carriage of exhibits will be paid by the receivers. The exhibits will be divided into the following classes:—(1) Collection of photographs illustrating Glamorganshire, past and present; (2) Collection of photographs illustrating that portion of Monmouthshire (Newport included) within twelve miles of Cardiff; (3) Collection of photographs of the churches and chapels of Glamorganshire; (4) Collection of photographs of Cardiff, past or present; (5) Collection of photographs of Glamorganshire castles, mansions, religious houses, and crosses; (6) Collection of lantern slides illustrating the county of Glamorgan; (7) Collection of lantern slides illustrating Cardiff, past and present. The Committee will give a gold, silver, and bronze medal in Class 1. A silver and bronze medal will be given in each of the other classes. All exhibits in Classes 2 to 5 will be considered as also competing in Class 1. It is desired that the collection should comprise photographs as follows:—All buildings or places likely to be altered or removed; all parish churches (interior and exterior), together with any special features therein, such as rood screens, carved chests, etc.; monuments, or market and other crosses; castles or manor houses, and their contents, such as family portraits, old furniture, etc.; views of the coast line, docks, shipping, etc.; views of the principal streets and buildings in towns. It is suggested that descriptive readings should accompany exhibits of lantern slides, to increase their interest when shown through the optical lantern.



## WHERE TO GO.

By A. B.

PHOTOGRAPHY is a most pleasant hobby; here I am purposely repeating the kind of phrase with which so many of our articles commence, but I reiterate it with pleasure, so cordially do I endorse the sentiment. And of all its branches none excels in interest that of landscape photography. The difficulty is, for those of limited opportunities, to know where to go to get the scenery which shall come up to one's ideal. We know that each amateur in his first two years or so takes everything he comes across; nothing comes amiss to him; and in this way experience is acquired. But after a while he becomes critical, and the resolve is made to use fewer plates and make better pictures. The cycle and camera are frequently associated, but we do not quite so often hear of the association of camera and boat, yet surely it is the most natural and delightful conjunction possible; how often have I wished that in my earling boating trips I had been accompanied by my companion of recent years, the camera. We may envy those who have the leisure to roam round the world, but yet in our own land are most beautiful scenes to be found, and it occurs to me to jot down a little of my own experience, as a hint to those who delight in planning excursions for the sunny days we hope for. My mind instantly reverts to the beautiful valley of the Avon in the neighbourhood of Bath and Bradford, with which I am well acquainted, but this falls in the route I am about to mention. In 1871 I made one of a party of five on a circular boating tour through some of the prettiest river scenery in England, and for the benefit of those it may interest I will give the course taken. Shortly, it was as follows: by rail to Oxford (taking our boat on trucks), from Oxford to Warwick by canal, from Warwick along the Avon to Tewkesbury, thence down the Severn as far as Gloucester; here we entered the canal which runs to Hereford, or, more correctly, from Hereford. Carting the boat through the town, we embarked on the Wye, and followed this river to its mouth; chartering a larger boat, we towed our own across the mouth of the Severn to the river Avon, up which we rowed our own boat to Bristol, and thence to Bath. Here we took to the canal (Kennet and Avon), which brought us to the Thames at Reading. Now a glance at the map will show what places of interest the route touches, and I need only mention a few points to prove the attractiveness of the journey to camera men; first the lovely scenery of the Warwickshire Avon, apart from the attraction of such places as Warwick, Evesham, Stratford-on-Avon, Tewkesbury, etc.; the grand scenery of the Wye district, Ross, Whitechurch, Symonds Yat, Monmouth, Raglan, Goodrich, Tintern, Chepstow, etc., and the beauty of the southern Avon; then again the canal scenery is decidedly picturesque, and must by no means be supposed to be on a par with that of the canals in the home counties. In fine, to anyone who possesses a love for aquatics, and delights in employing the camera, I could not recommend a more enjoyable trip, and I would, if required, furnish fuller particulars.

## Quarterly Examinations in Photography.

**Question 29.**—What is the best method of collecting silver residues, and is this advisable for an amateur?

**ANSWER.**—Residues may be divided into classes: 1. Plates; 2. Paper; 3. Fixing baths; 4. Washing water from prints; 5. Various intensifiers and other solutions containing silver.

(A) 1. Fix, and then mix bath with No. 3.

(B) Mix 4 and 5 and add hydrochloric acid; the silver then comes down as chloride; filter off and collect.

(C) 2. Burn this, and keep the ashes.

(D) 3. Add some sulphide of ammonium or lime of potash. The silver will be precipitated as sulphide, together with some sulphur, mix the results with C. Another way is to put in scrap copper or zinc, when the silver will be precipitated as before.

Take the results of all the processes, and fuse up with nitrate of potash and powdered charcoal. The silver will be found as a button at the bottom of the crucible at the end of the operations. C.

**Question 30.**—What is known as Feer's process?

**ANSWER.**—Feer's process is a diazo process. Diazo compounds united with sodium sulphite form diazo-sulphonic salts, which with amines

and phenols in solution form colourless liquids, which can be spread upon paper or muslin, or, indeed, any substance. After drying in the dark, this can be printed under a negative. On exposure to light the diazo-sulphonic salt is decomposed, and the free diazo body reacts with the phenol or amine present, and diazo colours are formed of great intensity. The following has worked well in the hands of a friend of mine:—

Ditolyltetrazo sulphonate of soda	...	...	30 parts.
Phenylendiamine	...	...	20 "
Water	...	...	1,000 "

The process is referred to in last year's AMATEUR PHOTOGRAPHER as having been explained by Mr. Bevan. R. C. M.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Ashton.**—The monthly meeting of this recently formed society was held on the 25th ult., in the Jermyn-street Mission Room, the President, Dr. Hamilton, in the chair. The society has already 60 members, and expects large accessions when it has secured for itself a local habitation as well as a name. The meeting was well attended and the proceedings were of great interest. A discussion took place as to whether the rooms about to be vacated by the Young Men's Christian Association should be taken, and the general opinion seemed to be in favour of doing so, although the present number of members—60—might not be able to pay the rent and other expenses without some increase of subscription. After some discussion Mr. Redfern moved that Mr. G. H. Dean and Mr. Robert T. Marsland endeavour to see all the members to ascertain the financial outlook, and if from their report there was a fair prospect of being able to meet the expenditure, they be authorised to take the rooms of the Young Men's Christian Association on quarterly tenancy. Mr. Kenworthy seconded the motion. He thought it was the best suit of rooms in the town for their purpose. This was adopted. Dr. Hamilton then gave a description of the "Platinotype Process." There were three methods, but the one he should ask their consideration to was the hot process, because it was the simplest, and, in his opinion, they got pictures equal, if not superior to those obtained by any other method. Some years ago Mr. Willis, of the Platinotype Company, made a great many experiments, which resulted in his being able to bring a paper before the public which was coated with the salt of iron and platinum, and which, when exposed through an ordinary negative to the light, formed a faint image. On this being placed in a potash bath the picture was brought out. The doctor then went through the process. The potash bath was heated by means of gas to a temperature of 150 or 160 degrees. The range may vary from 130 to 180 degrees, according to the faintness or vigour of the picture desired. He found 150 the best for a well-exposed print. The print was then placed face down in the bath, the left edge first, and then lowering the rest of the paper towards the right, so as to prevent bubbles, which would spoil the picture. After being in a few seconds the paper was raised, and the audience cheered as they witnessed the fully developed picture. The picture was next washed in a bath of acid to remove traces of iron.

**Blackburn.**—The last meeting of the winter session for the exhibition of lantern slides was held on the 24th ult., the President (Major Baron) in the chair. A series of Scotch slides was put through the lantern, supplemented by a selection furnished by different members of the Society. There was a good attendance of members and friends. The programme of excursions for the summer season will be at once arranged by the Committee and issued to the members.

**Dukinfield.**—The ordinary monthly meeting was held on the 24th ult. After the election of four new members, a very pleasant evening was spent in viewing a good number of slides, "A Tour in Devonshire," etc., lent by the Manchester Amateur Photographic Society. Mr. Shirley, the President, gave a description of the different views as they were thrown upon the screen, and Mr. W. Jenkinson manipulated the lime-light lantern.

**Ealing.**—A meeting was held on the 19th ult. The chair was taken at 8 o'clock by the President. Mr. F. W. Hart, F.C.S., gave a demonstration of his method of eliminating hypo. from silver prints and plates. The process was watched with much attention by the members present. Mr. Hart also showed a new plate-washer. At the meeting on Thursday Mr. Howson was to give a demonstration on the working of Alpha plates and paper.



**Graphic (Plymouth).**—On the 23rd, after the routine business, Mrs. Lewarne was balloted for and elected a member. The exhibition of members' work was postponed until later in the season. A proposal for a survey of the county was discussed. Mr. Micklewood then gave an exhibition of a large number of lantern-slides prepared by himself, and furnished data of exposure, development, etc.

**Great Yarmouth.**—The members paid a visit on the 30th ult. to Somerleyton Hall, the residence of Sir Saville Crossley, Bart., M.P., when a good number of plates were exposed. On the 14th inst. there will be a lantern show of members' work.

**Huddersfield.**—On the 24th ult. about 200 slides by members of the Society were passed through the lantern, many of them possessing considerable merit. At the close of the meeting a print on Dr. Jacoby's chloride of silver emulsion paper, sent by Mr. Otto Scholz, was handed round for inspection and samples of the paper distributed.

**Ipswich.**—An extremely interesting evening was spent by the members and friends of the Ipswich Photographic Society on the 25th ult., when a number of negatives of views taken by members were thrown upon a screen. The lantern was manipulated by Mr. A. H. Mitchell, assisted by Messrs. J. C. Wigin and A. R. Christopherson, Mr. Leonard Hill (Hon. Sec.) reading out the titles.

**Ireland.**—A technical meeting was held on the 26th ult., Mr. H. Bewley in the chair. A paper on "Some Printing Processes" was given by Mr. M. Hedley, who went exhaustively into the subject, and exhibited a large number of prints in silver, gelatino-chloride, ferro-prussiate, platinotype, bromide, and Diazotype. Mr. Hedley advocated the use of green glass for printing as giving a pluckier picture with a greater amount of detail, and stated that it was pre-eminently suited for matt-surface paper. In support of his theory he exhibited some pictures, which were equal in every respect to platinotype prints. A discussion followed, and a vote of thanks having been passed to Mr. Hedley, the meeting closed.

**Newcastle-on-Tyne.**—The ordinary meeting was held on the 24th ult., Mr. A. S. Stevenson, J.P., in the chair. The Secretary's and Treasurer's reports were presented. A discussion on "Bromide Contact Printing" then took place, opened by Mr. J. E. Goold, who described mechanism by which he manipulated 15 by 12 printing frames, and produced thirty prints per hour from each negative. Several members contributed their experiences.

**North Middlesex.**—The first outing of the Society took place on the 22nd ult. The members met at King's Cross (Metropolitan), and booked to Rickmansworth by the new line. Considering the weather, a fair number turned up. The subjects chosen were Moor Park, the beautiful seat of Lord Ebury, whose magnificent trees and herds of deer were admired by all. The canal at Rickmansworth and adjacent rivers up to Harefield afforded lovely bits for over 100 plates. Mr. Chang, with his hand-camera, was well to the front. Not the least enjoyable event was the wind-up of the day, when all joined in a good spread at the Fisheries Hotel, Harefield.

**Oxford.**—On the 17th ult. the President (Mr. E. A. Ryman Hall)

in the chair, an exhibition of apparatus was held. Cameras, etc., were lent by the manufacturers and the members of the Society. The President described the various articles. Mr. A. F. Kerry, M.A., will give a lecture on "Bromide and Kallitype Paper Printing" on April 7th.

**Putney.**—A meeting was held on the 25th ult., Mr. T. Gilbert in the chair. The members and their friends spent a most enjoyable evening witnessing an exhibition of some 200 slides, the work of the following members—Messrs. Congreve, Faulkner, Gilbert, Gorin, Macdonald, W. and G. E. Martin, Ovey, and Ballard. The Repeater hand-camera was shown and explained at the close of the evening. Next meeting, April 8th, American slides.

**Sheffield Camera Club.**—A general meeting was held on the 25th ult., the President, Mr. G. T. W. Newsholme, F.C.S., in the chair, to hear a lecture entitled "Through North Devon with a Camera," by Professor J. O. Arnold, F.C.S., illustrated by slides from negatives taken by himself. Starting from Liverpool to Swansea, thence to Ilfracombe, the tour was graphically described, and many places of interest connected with Kingsley's "Westward Ho" and Blackmore's "Lorna Doone"—Bridport, Clovelly, Lyme-mouth, and the famed Doone Valley—were beautifully portrayed, although most of the negatives were taken in heavy rain. A number of new members were elected and others nominated.

**Wolverhampton.**—The third annual meeting was held on the 24th ult., the President (Mr. T. Ironmonger) in the chair. On the motion of Mr. H. E. Perry, seconded by Mr. W. Ratcliff, the report and statement of accounts were adopted. The election of officers was then proceeded with. Mr. Ironmonger proposed Mr. Lyons Wright as his successor. Mr. Perry seconded the motion, which was carried unanimously, and Mr. Wright returned thanks. The following vice-presidents were then elected: The Mayor of Wolverhampton (Mr. John Marston), Mr. Thomas Ironmonger, Lieutenant-Colonel Thorneycroft, Mr. C. T. Mander, Mr. G. B. Thorneycroft, Mr. J. Forsyth, Mr. L. B. Moreton, Mr. C. B. Wight-Boycott, and Mr. Harold Holcroft. Mr. Gibson was re-elected treasurer, Messrs. J. W. Evans and J. Gale were appointed hon. secretaries, and a committee was also elected. Mr. Ratcliff stated that the society, according to its present rules, was open to amateur photographers only, but he thought that now they should open it to professional photographers, or anyone else. He moved a resolution that the name of the society be altered to that of the "Wolverhampton Photographic Society," and that Rule 2 limiting the members to amateurs should be erased. This was seconded by Mr. H. M. Lord, supported by Mr. Ironmonger, and carried unanimously. The committee were instructed to draft a new set of rules, and take into consideration the holding of quarterly exhibitions of photographs by members of the society, and to report to a general meeting. Mr. Ironmonger stated that the room in which the society held its meetings was inadequate for showing lantern slides, and he suggested that the music room at the Institute for the Blind, Victoria-street, should be hired in the future. The suggestion met with general approval, and the matter was left in the hands of the president and secretary.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4588. Developer for Bromide Paper. — What

weights are used in Messrs. Morgan and Kidd's ferrous oxalate developer, apothecaries' or avoirdupois? — **FEROX.**

4589. **Developing.**—Will some one please tell me what quantities of the following 10 per cent. solutions I should use for developing Edward's Isochromatic plates? Ilford 10 per cent., pyro, ammonium-bromide, and ammonia. Also, which is best for above plates, pyro or quinol? — **FACILE.**

4590. **Pinholes.**—Will any of your readers kindly inform me which is the best remedy for pinholes which very often occur in the sky portion of the negative? I dust the plates before exposure and also before developing. — **PERPLEXED BEGINNER.**

4591. **Dark Slides.**—I intend making some dark slides and am told that wood ready grooved and prepared can be bought. Can any reader supply me with any particulars? or also if dark slide hinged shutters can be obtained? — **TE PAKACHA MAORI.**

4592. **Developer for Hand-Cameras.**—Will some one kindly give me a formula for development of hand-camera shots (pyro or hydroquinone preferred)? — **LENSIGRAPH.**

4593. **Lenses for Hand-Cameras.**—What lenses are most suited to hand-camera work? Where can I obtain them, and at what prices? I should prefer fixed-focus lens with metal dark slides. — **LENSIGRAPH.**

4594. **Hand-Cameras.**—Can any one who has used Griffith's guinea hand-camera certify that it is a reliable instrument, and much oblige — **INTENDING BUYER?**

4595. **Lighting, Backgrounds, etc.**—Can some amateur give me any hints as to the lighting, background, and exposure necessary for indoor photography, and also inform me if my Instantograph lens should be worked at its full aperture? I fail to get required density. — **ANAXAGORAS.**

4596. **Lanternoscope.**—Would some kind amateur

tell me how to make one of the above, with diagrams if possible, and oblige.—**FRED?**

4597. **Prints Curling.**—Would some one kindly inform me of the best way to prevent albumen prints from curling after toning? — **STOCKLAND.**

4598. **Houghton's Tent-Atelier.**—Can anyone who has used this give me his experience? Also want Houghton's address. — **CHARLES C. MACKLEY (Germany).**

4599. **Lens and Shutter for Detective Camera.**—Wanted to know of a good lens, and also shutter that can be set without uncovering lens, moderate in price, for home-made detective camera. — **MOGUS.**

## ANSWERS.

4551. **Florence, Exposure &c.**—This would probably be about two-thirds that required for England. — **OSIRIS.**

4553. **Dry Plates for Positives.**—If dry plates for making positives in the camera are meant, Fallowfield is the English agent for the Phoenix dry plate, an American manufacture. — **OSIRIS.**

4559. **Lens.**—A single lens is better for landscape work because there are fewer reflecting surfaces, and the image is consequently more brilliant. — **OSIRIS.**

4560. **Varnish.**  
Finest selected copal ... .. 2 oz.  
" " albanum ... .. 2 "  
Powdered glass ... .. 2 "  
Turpentine ... .. 1 pint.  
Mix and dissolve by the heat of a water bath, and add

Venice turpentine ... .. 1 oz.  
Plain linseed varnish ... .. 1 "  
Leave to settle for 24 hours in a moderate temperature and filter. Or  
Picked sandarac ... .. 4 oz.  
Mastic in tears ... .. 1 "



Powdered glass ... .. 2 oz.  
 Methylated spirit, 64 o.p. ... 1 pint.  
 When dissolved, add  
 Fluid Venice turpentine ... 8 oz.  
 A better one still, which is technically called water-proof barrel glass, is  
 Colophony, ... .. 2½ oz.  
 Shellac ... .. 3 "  
 Turpentine ... .. 9 "  
 Yellow wax ... .. 1 "  
 Methylated spirit ... .. 1 pint.

Melt the wax on a water bath, add the turpentine, shellac, and colophony, and, finally, the spirit. After one or more good thick coats have been applied of this, give the wood a coating of alcoholic shellac solution. There is hardly any varnish which will resist a strong alkali, but the last is absolutely waterproof.—OSIRIS.

4564. **Rectilinear Lenses.**—The cheapest R.R. lenses are those of Hockin, Son, and Wilson, and Vevers, of Leeds. The first-named I have used for three years with every satisfaction.—OSIRIS.

4566. **Switzerland.**—In the latter part of last year were some short leaders on snow scenes, which would give this querist all the information required. I append the following brief notes, taken from the said articles:—Give a long exposure, that is, expose for the black pines, and totally disregard the snow-covered distance; commence development with the normal quantity of accelerator and restrainer, but with about one-tenth of a grain of pyro to the ounce. When the detail begins to appear, add another one-tenth of a grain of pyro; when all detail is out, add the normal amount of pyro, with a little more restrainer.—OSIRIS.

4566. **Switzerland.**—Expose for the trees and remedy the too great density of the snow and sky by developing on the system recommended in AMATEUR PHOTOGRAPHER of December 12th, 1890, p. 414. Send for a copy if you have not one. Briefly the system is to start with as little as one-tenth of a grain of pyro to a 1½ oz. developer with 5 gr. bromide and 3 minims pure ammonia. Let this act for five minutes. Don't hurry it. Then add another tenth of a grain of pyro and develop for five minutes more. After this, add 1 gr. pyro and 5 gr. bromide. After another five minutes, if density is not sufficient, throw away developer and pour on a fresh one composed thus:

Pyro ... .. 2 gr.  
 Bromide ... .. 4 "  
 Ammonia ... .. 3 minims  
 Water ... .. 1½ oz.

Rock the dish all through the development. You can use the tenth of pyro by mixing 1 gr. in 10 dr. water, and taking 1 dr. for first two applications. The third and fourth should be used dry.—ISIS.

4567. **Hand or Instantaneous Camera.**—(1) A camera with a fixed focus (so-called) lens. (2) Roberts' hand-camera. (3) Ditto.—OSIRIS.

4570. **Exposure Meter.**—I can thoroughly recommend the "Watkins' exposure meter." It is quite reliable and very simple in use, it is very small too.—FRIDA.

4573. **Lamp Shades.**—Eastman's films could be used, but better results would be obtained by using a thicker and a translucent support, and a slower emulsion. Why not try Fry's ivory celluloid films for transparencies?—OSIRIS.

4574. **Opalines.**—I do not know how you could get bubbles if you follow the instructions well. Soak print well before putting in gelatine, and warm glass plate too. When you are putting the print on glass after leaving it soaking in gelatine for a little time, bend it in this shape U and place on carefully. If you rub it a little time before you take it out, it would be safer. Squeeze it on well. I think if you follow these directions you will succeed. The glass must be perfectly clean.—FRIDA.

4575. **Drying Prints.**—White blotting paper alone should be used, and nothing will take out the pink stains.—OSIRIS.

4576. **Print Washer.**—Marion and Co. have an excellent one which can be used either for plates or prints. Its price is plates or prints up to 8½ by 6½, 44s.; 12 by 10, 60s.—CHESTER.

4577. **Electric Light for Dark-Room.**—If F. Powell would send me his address and requirements through the Editor, I will send him some particulars.—CHESTER.

4577. **Electric Light for Dark-Room.**—It is very wrong to recommend one's own work, but as I don't know of any book giving special details suitable for one who is not an expert in electrical matters, I would recommend F. Powell to get parts 576, 577, and 578 of the *Boys' Own Paper* (February and March parts, last year), in which he will find full details on fitting up a simple electric lamp. He has only to use lamps with red globes to render it suitable for his dark-room.—R. A. R. BENNETT.

4578. **Lantern Slides.**—A good toning bath is purple-red.

Chloride of gold ... .. 1 gr.  
 Sulphocyanide of ammonium ... 25 "  
 Hyposulphite soda ... .. 240 "  
 Water ... .. 2 oz.

Dissolve gold in water and add last. Prepare twelve hours before use. This bath is recommended for

Aristotype prints. A good slide looks as well without toning as not. Get Dresser's "Lantern Slides, and How to Make Them," published by Fry Manufacturing Co., price 6d.—CHESTER.

4578. **Lantern Slides.**—If you use the Ilford special lantern plate and the developer they recommend, it is absolutely unnecessary to tone, as very fine black tones are at once obtained. It is not absolutely necessary to tone lantern slides.—OSIRIS.

4579. **Quarter-plate Converted into a Hand-Camera.**—Any camera maker would do it, but try Roberts, camera maker, Leytonstone, or Cusworth, Eagle House, Hainault Road, Leytonstone, or Mr. Platt, Birkbeck Works, Albion Road, Dalston, E.—OSIRIS.

4583. **Norway.**—End of May would not be too early, but June would be better. The following tour would occupy about a fortnight and cost from £15 to £20—Hull, Stavanger, Odde (overland), Vik (for Vordingto), Ulvik, Eide, Vossevangen, Bergen, Hull. Plenty of good work for the camera; give short exposures.—H. N. MALAN.

4583. **Norway.**—May decidedly too early. Weather probably wet, certainly cold. Route indicated very pretty one. The main expense is getting out. In Norway, 10s. a day will do you, unless you travel very hard. If "Photos" will write to me I will give him any hints I can, and I know Norway well.—R. O. MACLEOD.

4584. **Silver Stained Negative.**—If the negative is varnished, remove it and apply this (negative being put in a dish):

(A):  
 Sulphocyanide of ammonia ... .. ½ dr.  
 Water ... .. 1 oz.

(B):  
 Nitric acid ... .. ½ dr.  
 Water ... .. 1 oz.

(this will only do for one negative), and then place in a saturated solution of chrome alum.—CHESTER.

4584. **Silver Stained Negative.**—Immerse in:

Sulphocyanide of potassium ... .. 10 gr.  
 Nitric acid ... .. 5 min.  
 Water ... .. 1 oz.

and gently rub the stains with a small piece of cotton wool, but great care must be exercised in the manipulation. The following is given in the "British Journal Almanac." Apply the following:

(A):  
 Sulphocyanide of ammonia ... .. ½ dr.  
 Water ... .. 1 oz.

(B):  
 Nitric acid ... .. ½ dr.  
 Water ... .. 1 oz.

A freshly made solution being used for each negative. This is followed after washing by the application of a saturated solution of chrome alum.—WIZARD.

4584. **Silver Stained Negative.**—This has been asked many times, but the really effectual answer has yet to be evolved. You might be able to remove the marks by soaking in strong solution of hypo for some hours, or weak solution of cyanide of potassium, but as anything that removes the marks will also remove the image, it is obvious that nothing much can be done.—R. A. R. BENNETT.

4586. **Loan of Camera.**—"Prof" would find a very good half-plate Instantograph camera with R.R. lens at the following address: Coachman, The Lodge, Roby, Liverpool.—J. A. S.

4587. **Channel Islands.**—There are no restrictions whatever on photography. Ilford plates can be obtained at Arnold's, in the Arcade, Guernsey, and probably in Jersey also. Sark is a very paradise for the camera. I shall be glad to give further information if required. Editor has address.—H. N. MALAN.

4587. **Channel Islands.**—"Rivuli" will find no restrictions whatever; no custom-house searching either in Guernsey or Jersey. De Faye, photographic chemist, 21, David Place, St. Helier's, Jersey, has a large stock of plates, also dark-room.—J. F. LAURENS.

4587. **Channel Islands.**—I beg to inform "Rivuli" that there are no restrictions placed upon photography in the Channel Islands. Ilford plates may be obtained both in St. Helier's, Jersey, and in St. Peter's Port, Guernsey. If "Rivuli" should be in Guernsey at any time, I should be most happy to give him any particulars regarding the best spots to photograph.—SARNIA. (Address with Editor.)

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOTO.

**NOTE.**—In this column we cannot advise upon purchase of APPARATUS, PLATES, PAPER, or PHOTOGRAPHIC MATERIALS.

Advice will be given upon questions of "Photographic Procedure," negatives and prints will be criticised, and every help given to the worker in photography.

G. O. M.—There is no society at Barrow-in-Furness that we are aware of. Thanks for your high opinion of the AMATEUR PHOTOGRAPHER and our "Annual."

GEO. LAWLEY.—Any photographs that will come within the title are eligible. We have a special competition for "River Scenery," therefore views including river or running stream should be reserved.

EACILE.—Drunken architecture is never a fault of the lens, but is due to the camera not being held upright. The R.R. lens is more rapid than the single lens, the relative rapidity being R.R. = 1, single lens = ½; therefore the single lens is twice as slow as the R.R.

INTERNATIONAL.—The print you enclose is good both in tone and technical work, etc. Whether you would stand any chance in a competition depends greatly upon what other work is contributed. You can but try.

CARLSBAD.—Your camera should be quite satisfactory with the partition, which any camera maker would fit in for you. For the latter part of your query see note at head of this column.

GRAMMAR.—You have asked us a question which we cannot answer for the simple reason we do not know what distance you would have between object and lens, and, secondly, because we do not know how quickly your object would move, and, thirdly, because we do not know the focal length of your lens. You would be able to answer this query from the "Dictionary of Photography," pp. 121-122, second edition. If you like to send us the above data we will work out the calculations for you and let you know next week.

F. FIRST.—There is not the slightest difficulty in reducing from 5 by 4 negatives to lantern size, but the directions are rather too copious to give here. You would find full directions in the "Dictionary of Photography." The negative is placed against against the window or any source of light, and the lens is pointed at it and the focus and distances so adjusted that the image of the negative just fills a 3¼ square space marked on focussing screen.

J. ROBERTSHAW.—(1) Good, though slightly over-exposed; (2) Very hard, too much pyro in the developer; (3) A little stiff, but otherwise good; (4) Over-exposed and very poor; (5) Good; (6) Poor. ANAXAGORAS.—See note at the head of this column.

J. H. P.—There is no licence required for selling prints.

LINDUM.—Entered your name. We are glad you have derived benefit from it. We cannot suggest any remedy for your absence.

H. L. (Newcastle).—The only thing we can suggest is to make trials of different exposures and continue the development longer, with an increase of bromide towards the last. We will try if you like and see what we can do.

A. NOVICE.—It certainly is not worth while buying the instrument named. You may always accept the statement of the makers. The instrument is not absolutely reliable, but it is in such general use, one is compelled to stick to it.

C. W. F.—Your print is over-exposed, and consequently flat and wanting in pluck. It looks like a pretty spot, but we can hardly judge from the print.

W. DE M. PENNEFATHER.—Two of your slides were cracked when received. (1) A little too thin; (2) Good; (3) A little bit too hard; there's a good deal in the floor which might have been got out with a little longer exposure; (4) Over-exposed and poor; (5) Good; (6) Good; (7) Good, considering the difficulties under which you worked.

ROBY.—No. 1 would have stood more developing. Negatives 2 and 3 were smashed to atoms. The negative you sent last week of house was over-exposed and under-developed. "The Lady and her Cat" is slightly under-exposed and under-developed, and the lighting is very curious; had your sitter turned to the light, instead of away from it, very much better results would have been obtained.

A. E. CHAPMAN.—The negative you send is very fair, but would have stood a little longer exposure, and would have been better had you been a little further off and taken in the whole of the tree. The slide is very much over-exposed. We shall always be pleased to help you "potter" out your difficulties, and will help you still further if you send some prints for criticism.

CHARLES C. MACKLEY.—We had one of the tents built specially for our offices, and find it answers admirably for such work as we need.

W. W. GRATSCHEFF.—Your letter of acknowledgment duly received, for which many thanks.

F. H. RUELL.—We have your letter and draft. Will do as you desire.

JE KOOTIL.—Shall be much obliged if you will send us an account.

W. G. BARTON.—Delighted to hear from you, or advise upon any photographic matter.

H. PERCY HOLMES.—Will reply by post. Thanks for your kind remarks.



## Quarterly Examinations in Photography.

### QUESTIONS.

1. What is meant by "ripening" an emulsion? Give the different methods.
2. A plate has been specially coated with a film of emulsion  $\frac{1}{4}$  in. thick, and is exposed on a brilliantly lit object for one-tenth of a second, yet on development an image is seen on the back of the film. To what action would you ascribe this—the light not having been able to penetrate through the film—and state any other instances where such action may occur?
3. Write an answer to the letter of "E. A. D." on p. 224 AMATEUR PHOTOGRAPHER, March 27th, giving your experiences and opinion on the views there expressed.

(Latest Day for Answers—April 13th.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
  2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.
  3. A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.
  4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.
  5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.
- NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed to:—  
"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, from April 8th, 1887, up to date, 208 numbers, all quite clean and whole; what offers?—J. Robertson, 24, Millgate, Arbroath.

**Bicycles.**—Cushion tyre Safety, just new, cost £14, balls everywhere; £7 10s.; approval.—7, Dereham Road, Norwich.

**Cameras, etc.**—Collins' pocket cameras, in cases, 5 by 4 and quarter-plate, each with six double backs, and fixed focus hand-cameras, working with above backs, all in good condition; no approval.—Mr. H. Miles, 19, Kensington Crescent, W.

Box camera, 12½ square; exchange half-plate wide-angle lens, shutter, or offers.—1A, Lower Hester Street, Northampton.

12 by 10 camera, all movements; £3 10s.; exchange half-plate camera, R.R. lens.—Tooth, Stephen Street, Rugby.

Camera, 7½ by 5, by Hare, London, equal to new, three slides, strong leather case, cost £12. What offers?—W. P. Pitts, 20, Abington Street, Northampton.

Short-focus camera, three double backs, two-fold stand, £3; four-drawer cabinet, containing 135 gull and wild bird eggs, exchange curiosities or sell.—Waters, 21, Westbourne Park Road, Bayswater.

**Cameras, Lenses, etc.**—Lancaster's half-plate Instantograph, lens and shutter, two slides; cost £4 12s.; price £3; as good as new.—Firth, Oakleigh House, Wakefield.

Ross' portable symmetrical lens, No. 3, in perfect condition, 42s.; Kershaw's shutter, 2½ in., 10s.; Beresford's whole-plate changing bag, new, 7s. 6d.; one Tylar's metal dark-slide, 10 by 8, new, 5s.; quarter-plate camera, and three dark-slides, rapid single lens, Greenall's shutter, and case, the lot 30s.—Guthrie, Bonnington, Edinburgh.

Lancaster's 1891 extra-special quarter-plate, combination Rectigraph lens, and double dark-slide, new last month; 75s.—Maltby, 267, St. Paul's Road, West Smithwick.

Whole-plate McKellen extension camera, with one double slide, and Eastman's roll-holder in case, together with Ross' 10 by 8 R.R. lens and Kershaw shutter; £14 10s.—Baird, 15, Lothian Street, Edinburgh.

Lancaster's quarter-plate Merveilleux camera, double dry slide, lens, and stand; price 14s.—L. Bagshaw, Union Street, Doncaster.

Whole-plate tourist camera, Billicliff's patent, very light, leather bellows, three double slides, £4 10s.; 8½ by 6½ Dallmeyer's R.R. lens and diaphragm, £5, or £9 for both; in perfect order; 10 by 8 R.R. lens and case, diaphragm in fine condition, 55s. cash; approx. on deposit. Address with Editor.

Quarter-plate mahogany bellows-body camera (by Copeland), rapid view lens, rack adjustment, double slide, and walking-stick tripod, 25s.—Cleminson, outfitter, Portsmouth.

Watson's half-plate Light Premier camera, three double dark slides, all brass bound, Ross's 8 by 5 symmetrical lens, solid leather case, with folding tripod, bought last year, cost £19, perfect condition, £12.—Mrs. Dowell, Larkhill Terrace, Blackburn.

Half-plate Instantograph, new last year, with combination Rectigraph and Becker's 7 by 5 R.R. lenses, Chronolux shutter, universal stand, three mahogany and nine Tylar's dark slides, and adaptor. What offers lot? Part exchange hand-camera. Particulars—Copeman, Henstridge.

Lancaster's whole-plate extra special patent camera, three double slides, all brass-bound with cases, three carriers, combination Rectigraph lens, sliding stand complete in bag, only used one season, excellent condition, cash offers?—Hugh Walton, Alston, Cumberland.

Lancaster's half-plate Instantograph, 50s.; finder,

3s. 6d.; 5 by 4 portrait lens (Stanley), 20s.—M. Whiteside, St. Nicholas, Cardiff.

Turnbull's Cyclists' camera, quarter-plate; Wray R.R. and Iris diaphragm, focussing screen and index of distances, six double slides, two finders, adjustable shutter, cost £7 last autumn, price £5; sent to Editor for report if desired.—Cecil Wood, Ilfracombe.

**Hand-Cameras, etc.**—No. 2 Demon, four plate bags, 7s. post free.—W. J. West, The Green, Gosport.

Hand-camera, Talmer, by Talbot and Bamer, carries twelve quarter-plates, fitted with rapid rectilinear lens and view finder, complete, quite new, a bargain, price only £2.—James Boyer, Homeleigh, Whitehall Road, Woodford Wells, Essex.

Detective camera, quarter-plate, almost new, perfect, leather outside; the lens and shutter specially made by Wray, price £4, cost £8.—Box 1, Mallow.

Griffith's Guinea detective camera, almost new, 12s. 6d.—Miss Amy Mercer, Pennington, Manchester.

Ideal hand-camera, 12 plates, quarter, cost £8 10s., perfect condition, nearly new, approval, deposit; £5 5s.; or exchange quarter-plate camera with R.R. and W.A. lenses.—Taylor, 28, Gauze Street, Paisley, N.B.

Griffith's hand-camera, three double slides, equal to new, 12s. 6d.; 5 by 4 rectilinear lens, splendid definition, 18s. 6d.; Greenhall's Lightning shutter, 4s.—J. Smith, Dalton, Rotherham.

**Lenses, etc.**—Great bargain, 7 by 5 rapid rectilinear lens, f/8, Waterhouse stops, as new, for 19s. 6d.—92, Slad Road, Stroud, Glos.

5 by 4 Wray R.R. with Iris, works f/5.6, Newman's shutter on hood, cost £4 5s. last autumn; £2 15s., or lens, £2 5s., shutter, 15s.—Cecil Wood, Ilfracombe.

Optimus rapid landscape lens, 5 by 4, works f/11, cost 25s., price 15s.—Cecil Wood, Ilfracombe.

5 by 4 portrait lens (by Stanley); price 30s.—F. W., 109, Senegal Road, South Bermondsey.

Optimus Euryscope, half-plate, works at f/6, quite new, and in perfect condition; £3 15s.—Cooper, Chesham, Stockport.

Optimus 7 by 5 R.R. lens; 35s.; approval; deposit.—O. Michelmores, Broadstone, Dartmouth.

**Sets.**—Will give Lancaster's half set, complete, extra slide and shutter, for Facile hand-camera, or Underwood's quarter set and cash.—Waddell, Malden Road, N.W.

**Sundries.**—For sale, two gas bags, oxygen and hydrogen, good condition.—Sayer, Irlam, Manchester.

Black spaniel, prize winner, splendid worker; will exchange for first-class quarter-plate hand-camera or cash offers.—Bowman, Oakwood, Hexham.

"Photographic Reporter," Nos. 11 to 26 inclusive, unbound, as new; cost 12s.; price 6s.; buyer pays carriage.—Cecil Allen, East Park House, Southampton.

Ashford's stand, 5 ft. with 6 in. top, three-fold, sliding adjustable legs, very firm stand, cost 25s., price 15s.—Cecil Wood, Ilfracombe.

## WANTED.

**Hand-Cameras, etc.**—Hand-camera, quarter-plate, reflecting or Talmer.—27, Chandos Road, Bristol.

Shew's half-plate Eclipse hand-camera, recent make, standard pattern, sound, complete, cheap approval.—Full detailed description and price to Knowles, Woodlands, Bolton.

**Lantern.**—Good magic lantern, single or binocular, for oil and lime-light, cheap.—Dicker, 7, St. Paul's Churchyard, E.C.

**Lens.**—Good cabinet portrait lens, Optimus preferred, in exchange for nearly new ladies' gold watch, valued £4.—Oox, Swanley.

**Set.**—Good quarter or half plate set, complete, cheap, Thornton-Pickard time and instantaneous shutter for half-plate, and case for half-plate camera.—Dicker, 7, St. Paul's Churchyard, E.C.

**Shutters.**—Thornton-Pickard shutter, for 1½ in. hood.—E. Steele, 10, Oakford Road, N.W.

Newman shutter, to fit 1½ in. hood.—R. T. Walker, Utoxeter.

**Sundries.**—Standard works on photography, send lists and prices; also 1 to 12 "Photographic Answers" and "Practical Photography."—A., 107, Broad Street, Birmingham.

## NOTICES TO SUBSCRIBERS.

Subscriptions must be prepaid.

UNITED KINGDOM.....	Six Months, 5s. 6d.....	Twelve Months, 10s. 10d.
POSTAL UNION .....	" " 6s. 6d.....	" " 13s. 0d.
INDIA, CHINA, ETC. ....	" " 7s. 6d.....	" " 15s. 3d.

## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LTD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISING DEPARTMENT.**—All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—To ensure insertion, all Communications should reach the Editor on Tuesday.



No. 340. Vol. XIII.]

FRIDAY, APRIL 10, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.

OUR VIEWS.—Monthly Competition, No. 23, "Inland Scenery:" the awards—Lectures on Art, by Mr. Blanchard—The Camera Club Library—The *Weekly Scotsman* on Photographic Matters—Southport Social Photographic Club: Exhibition of Pictures, etc.—The Testing of Photographic Lenses at the Kew Observatory—Mr. Alex. Pitkethly, of Leith, is awarded a Silver Watch for a Letter upon Amateur Photography—Another Explosion of a Regulator in a Compressed Gas Cylinder—Quarterly Examinations: the Awards—Cardiff Photographic Exhibition—Brussels International Photographic Exhibition—The Croydon Camera Club Exhibition—The Camera Club Conference.

LEADER.—Home Portraiture.

EXHIBITION of Members' Pictures at the Camera Club.

LETTERS TO THE EDITOR.—Exposure v. Development (C. Hetherton Lewis, Eidsvoll)—Celluloid to Focus on (G. H. Verney)—National Photographic Exhibition (S. G. B. Wollaston)—Photography in Natural Colours (G. Lacy, Houston, S. Chamberlain, G. H. Verney)—Explosion of a Regulator on an Oxygen Gas Cylinder (H. D. Brandeth).

COMMUNICATED ARTICLES.—Composition, and Light and Shade (Robinson)—Amateur Photography (Pitkethly).

NOTES.—Edinburgh.

NOTES FOR NOVICES.—The Dark-Room.

APPARATUS—"Companion" Hand-Camera—The "Scotia" Camera.

EXHIBITIONS, ETC.—Liverpool (No. V.)—Camera Club Conference—Exhibition of Members' Pictures at the Camera Club.

THURSDAY EVENINGS AT THE CAMERA CLUB.

SOCIETIES' MEETINGS.—Bartow-in-Furness—Bedford—Birmingham—Bristol—Cornish—Croydon—Croydon-Micro.—Elizabethan—Faversham—Haltwhistle—Holborn—Ireland—Isle of Thanet—Leeds—Lewisham—Morley and District—North Middlesex—Photographic Society in Richmond—South London—Southport Social—Tunbridge Wells—Wakefield—Woolwich.

SOME eighty or more very admirable photographs have been entered for the AMATEUR PHOTOGRAPHER Monthly Competition No. 23, "Inland Scenery." The following awards have been made:—

### First Prize (Silver Medal).

A. T. NEWINGTON .. .. Ticehurst.

This competitor sends a charming picture, "Lovers' Walk, Dovedale, Derbyshire," which will be reproduced as the frontispiece to the May number of the *Photographic Reporter*. The picture is perfect in selection, composition, and balance; it is certainly one of the best we have yet had contributed to our monthly competitions; it was taken with a Dallmeyer's R.R. lens  $8\frac{1}{2}$  by  $6\frac{1}{2}$ , of 11 inch focus,  $f/24$ , with four seconds exposure of a Mawson and Swan's "Castle" plate,  $7\frac{1}{2}$  by 5, on the 11th September, in moderate light, at 2 p.m. The print is on Dr. Jacoby's chloride of silver emulsion paper squeegeed on to ground glass; a most perfect, soft, warm purple has been secured by toning with the sulphocyanide of ammonia bath.

### Second Prize (Bronze Medal).

ALFRED J. JEFFREYS .. .. Chelmsford.

The photograph sent in is a fine evening study, "An

Essex Country Road." It would, in our opinion, have been even a better picture had attention been given to the securing of more detail in the foreground. The print, sepia-type, somewhat clogs up the trees and foliage in the foreground, and we hope to show in collotype as good a print as the one sent to the competition; we have the negative, and find it to be an excellent one. The competitor says, "Exposed just after a storm, about 5.30 on a March evening." A Wray R.R. lens of 11 inch focus was used, and 10 secs. exposure given with  $f/22$  to an Ilford ordinary plate.

Other pictures which have special merit are "A Hampshire Home," Charles Blomley (Rochdale); "Greenwich Hospital," A. R. Berry (Brockley); "In Kew Gardens," A. James (Barry), a very well chosen point of view; "In Vizella," M. M. Lucio (Villa Nova de Gaia), a picture of considerable interest; "Broomhill Point, Derwentwater;" F. C. Worsley (Old Charlton), an admirable selection, but the introduction of cattle in the shallow water, or a boat in the middle distance would have helped the composition. There are many others which if space permitted we should like to mention, but they will all receive attention at our hands in the *Photographic Reporter*.

MANY of our readers will be interested to know that Mr. Valentine Blanchard will deliver a course of lectures at the Polytechnic, Regent-street, on "Art in Relation to Photography," which will be illustrated. The course commences on the 6th of May.

THE Secretary of the South London Photographic Society informs us that the Committee have decided to enforce an entrance fee of 2s. 6d., and that in future meetings will be held on the first and third Mondays in the month.

WE cannot refrain from complimenting the Hon. Librarian of the Camera Club, Mr. Lyonel Clark, upon the admirable catalogue of books and publications that are to be found in the Club's library. The members of the Club owe Mr. Clark much for the exertions that he has made to secure a thoroughly representative library; it is at present perhaps the best collection of books upon photography that exists, and Mr. Clark will not, we are sure, rest satisfied until it is complete. We would venture to suggest that those of our readers who could spare any standard works on photography could not do better than present them to the Camera Club, where they will be preserved for generations



yet unborn, and increase the usefulness of the library to the workers and thinkers of the present day.

THE *Weekly Scotsman* gives, in an article every Saturday under the heading "The Photo Club," interesting information, advice, and instruction upon photographic matters, conducted by a photographer. Last week the subjects were: "Photography as a Hobby; What it Costs;" "Apparatus;" "Photographic Society for Liberton," already referred to in these columns; "Slides wanted for Blantyre Mission, South Africa;" "The Development and Application of Photography," a lecture delivered last week by Mr. F. Dundas Todd; "Photographing the Heavens;" "Cloud Negatives;" "Leith Amateur Photographic Association;" "Edinburgh Photographic Society"—a sufficiently long list to show that the man on the *Weekly Scotsman* knows what is going on.

ON Wednesday, June 2nd, the members of the Southport Social Photographic Club propose to hold an exhibition of pictures and decorative transparencies at their meeting place, 15, Cambridge Arcade. The work is not to exceed whole-plate in size, and is to be entirely done by the exhibitor. There are to be three classes, and one prize given in each—for the best exhibit, for the best decorative transparency, and for the best instantaneous picture.

It will be remembered that some months since we drew attention to the work being done by the Superintendent of the Kew Observatory of the Royal Society to establish a Testing Department for Photographic Lenses. This department is now in working order, and anyone can have a lens tested under the following conditions, which have been supplied to us by Mr. G. M. Whipple, Superintendent of the Kew Observatory:—

1. The lenses are to be delivered either at the Kew Observatory, Richmond; or to the Secretary of the Horological Institute, Northampton Square, London, E.C.; or to Mr. R. Strachan, of the Meteorological Office, 63, Victoria Street, Westminster, S.W.

2. No certificate will be granted for a lens unless it bears a distinguishing number on its tube. The maker's name need not be engraved.

3. Lenses may be tested before they are fitted into cameras, provided they are numbered, and are accompanied by their flanged mounting. They cannot, however, be received for examination, if their diameters exceed 4 inches or the equivalent focus 30 inches.

4. The lenses are tested in sets, and the trials begin on or about the 1st and 15th of every month. Lenses intended to be submitted to such trials should be deposited either at the Observatory or at the receiving houses at least three days before either of those dates, accompanied by a duly attested form of entry, specifying the class of test to which the lens is to be subjected.

5. The fee for testing each lens is, for Class A 10s. 6d., Class B 2s. 6d. It will be payable when the lens is ready to be returned.

The Superintendent may decline, at his discretion, to receive any lens which he may consider unfitted for examination.

6. Duplicate certificates, with the customer's own name filled in, can be supplied to makers, at a charge of 1s. each. The original certificates must, however, be returned whenever an application is made for duplicates.

FOR CLASS A TEST.—Determination of the length of equivalent focus. Size of effective aperture with every stop in terms of focal length. Angle of field of view and size of plate effectively illuminated. Number of external reflecting surfaces. Coincidence of visual and chemical foci. Presence of flare spot. Workmanship of surfaces, structure and degree of transparency of glass. Centering in mount. Defining power. Relative quality of illumination in different parts of field. Amount of astigmatism or optical distortion.

FOR CLASS B TEST.—Determination of the length of equivalent focus. Size of effective aperture with largest stop. Angle of field of view. Size of plate effectively illuminated. Coincidence of visual and chemical foci.

Note.—All lenses certified at the Kew Observatory will be marked with the monogram "KO A or B and a registered number, unless the mounting is such that the operation of engraving cannot be performed with safety to the lens. An additional fee of 6d. will be charged for engraving the monogram and number.

Applications for forms for the entry of lenses for testing, and all other correspondence, should be addressed to the Superintendent, the Kew Observatory, Old Deer Park, Richmond, Surrey (Test Department).

THE Leith Amateur Photographic Association has always had prominent workers, and not one has been more active in advancing photography than the present Hon. Secretary, Mr. Alex. Pitkethly. This gentleman has just been awarded a prize silver watch for the best letter on "Amateur Photography" offered by the *People's Journal*, a paper with a circulation of over 250,000, and published in Dundee. The letter is interesting to amateurs and especially to beginners; we give the text in another column. Whilst congratulating Mr. Pitkethly on his success, we must also compliment the editor of the *People's Journal* on his enterprise and the assistance he has given to the advancement of amateur photography in Scotland.

On page 260 we have a correspondent's account of another of those mysterious explosions which seem inevitably associated with the use of compressed gases. They are mysterious because we have no satisfactory and conclusive evidence as to the cause. Of conjecture, however, there is plenty. In the case of an explosion of another regulator which took place a few months ago, it was suggested that a small particle of metal flying about loose in the chamber had become heated by the inrush of the oxygen, and thus ignited the gas. Some such explanation as this is certainly very plausible. An explosion which caused considerable conjecture, occurring some years back at the Laboratory of Agriculture, Paris—but in this case the gas was hydrogen—was explained in the same way. Probably in every case where one of these mysterious explosions occurs, the cause, if discovered, would be found to be partly due to the presence of atmospheric air, which may or may not—more probably may—contain fine dust or carbonaceous matter of some kind as an impurity, and the effect of powerfully compressing air is known to almost every school-boy who has ever listened to a lecture on heat, and witnessed the well-known experiment of firing a piece of tinder at the bottom of a cylinder, into which a piston fits very tightly. Now in the case in point we have probably a very good example of the formation of heat by compression; a small quantity of dust-laden air, a heavily compressed gas "repeatedly" turned on and off, and *voilà tout*—an explosion and a sudden burst of flame. Our correspondent has probably to be thankful that the bottle of gas was under heavy pressure, and pure, or otherwise a suck back of the flame might have had disastrous consequences. What may be the usual practice of professional lanternists we do not know, but we are always extremely careful to turn on the lantern-jet before turning on the oxygen at the bottle, which relieves the first great pressure.

THE result of our first "Quarterly Examination in Photography" is pretty close, and is as follows:—

- |                  |                 |
|------------------|-----------------|
| 1st. "Worfield," | with 306 marks. |
| 2nd. "Sunesis,"  | " 297 "         |
| 3rd. "C,"        | " 290 "         |

The order of the remaining competitors being "Development," "E. B.," "Lindum," "Electra," "R. C. M.," "Spain," "Biarritz," "A. C. S."

The fourth competitor ran very close for third place, and



the next four competitors were only a little way behind, and fairly close to one another. For the first prize we have decided to give photographic apparatus, materials, or books to the value of *two guineas*, the second prize to the value of *one guinea*—the third prize to the value of *half a guinea*. We shall be glad, therefore, if the successful competitors will kindly let us know what they would like, and we will forward to them what they select. Several of the competitors have expressed their satisfaction at this new departure, one competitor writing as follows: "I do not know whether it is necessary for me to express my wish to continue during the next quarter. Anyhow, I do so wish, and shall send answers next week. I may take this opportunity of saying how very valuable I think this examination is. It has stimulated me to work as nothing else could have done, and I am most sincerely grateful to the Editor of the AMATEUR PHOTOGRAPHER for having started these examinations." We hope that for the current quarter we shall have not only our old competitors, but new ones also, and we would again remind those desirous of competing that they must apply for registration, although such application may accompany the first lot of answers, which are due next Monday.

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We have just received the prospectus of the Cardiff Photographic Exhibition to be held from the 12th to 26th August, during the visit of the British Association to the city. The photographic society have already promoted two photographic exhibitions, which have been pronounced successes, and there is no doubt that under the able administration of the Exhibition Council even greater successes are in store. We note that the judges will be Messrs. Valentine Blanchard, Gambier Bolton, F.Z.S., and Mr. Paul Lange. Ten general classes are open to amateurs and professionals, including the champion class. Four classes are open only to amateur photographers viz.:—Class II., Portraiture; XII., Landscape or seascape; XIII., Genre; XIV., Landscape, 6½-plates. A special competition, open to photographic societies, under Class XV., is announced for the best collection of not less than fifty lantern-slides illustrating a town or district; prize, an optical lantern, value ten guineas. The slides to be accompanied by a lecture written or printed on cardboard. The winning slides to become the property of the Society. In all classes a silver and bronze medal and certificate is placed at the disposal of the judges. Entry forms and other particulars will be supplied upon application to the Hon. Secretaries, Messrs. G. H. Bedford and T. H. Faulks, 127, Bute Road, Cardiff. All exhibits must be delivered on or before the 7th of August.

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THE Secretary of the Brussels International Photographic Exhibition Committee, M. Ch. Puttemans, has favoured us with an advance proof of the prospectus of the Exhibition which is being promoted by the Belgian Association of Photography, and which will be under the patronage of His Majesty the King of the Belgians. The Exhibition is open to all comers, amateurs, professionals, and manufacturers of photographic apparatus. It is intended to open the Exhibition on the 20th of July, and it will remain open for some weeks. All frames, etc., must be received on or before the 10th of June, and earlier under certain conditions. The exhibits will be divided into seven classes. All "*works offered for exhibition will be submitted to a preliminary examination by a jury, to decide whether they shall be accepted or rejected.*" Class I. Negatives and positives on glass, ferrotypes, etc. II. Photographic prints, including enlargements. III. Photo-mechanical processes. IV. Application of photography to arts, science, education,

manufactures, etc. V. Photographic apparatus and materials applied to arts, scientific work, expeditions, educational or industrial purposes. VI. Photographic literature, works, and publications. VII. Publications illustrated by photo-mechanical processes. It is interesting to note the proposed constitution of the jury, viz.: (1) The President of the Belgian Association of Photography; (2) The Secretary; (3) Two members to be chosen by the Belgian exhibitors from the members of the Belgian Association; (4) Two members outside the Association, to be nominated by the Committee; (5) Five members to be nominated by foreign exhibitors, who will receive with their letter of admission a bulletin on which they are requested to write the names of five gentlemen of different nationality, who will be elected members of the jury by the majority of votes.

From the foregoing it will be seen that the Belgian Association are intending to do their best to secure a representative jury. There is little doubt that the Exhibition will be a pronounced success.

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SUPPLEMENTING our list of the awards given last week of prizes at the Croydon Camera Club Exhibition we note that the first prize for lantern-slides was awarded to Mr. C. F. Oakley, Mr. Hirst being commended. The judge was Mr. Charles Hussey, and he spoke very highly of the slides submitted for competition. In consequence of an error on the part of the executive, the wrong picture was awarded the AMATEUR PHOTOGRAPHER Bronze Medal. The mistake has since been rectified. Mr. A. J. Sargeant takes the Bronze Medal, and Messrs. Elliot and Whitaker tie for the certificate. As a consequence we shall have pleasure in giving two certificates.

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THE fifth annual Conference of the Camera Club has been held this week. The arrangements have been carefully made, and the Committee must again congratulate themselves upon the large number of members and friends who have attended the meetings. On Monday evening, we understand, the large room at the Club held an audience of some 200 or more who assembled to hear the items on the programme of the musical evening. On Tuesday the Conference opened at the Society of Arts under the able presidency of Captain W. de W. Abney, C.B., D.C.L., R.E., F.R.S., who referred to matters of general interest in his short address, giving particulars of an interview he had a week or so since with M. Lippmann and describing at some length the work done by that gentleman in connection with photography in colours. The paper which created most discussion was that contributed by Mr. Joseph Pennell on "Photography as a Hindrance and a Help to Art," which in the absence of the author was read by Major J. F. Nott. Mr. Lionel Clark discoursed upon "The Use of Uncorrected Lenses," calling attention to experiments that he had made with spectacle or periscopic lenses, and showing negatives taken with such lenses. The paper by the Rev. F. C. Lambert, M.A., "A Note on the Physiological Aspect of some Problems in Art," was taken as read. In the evening a selection of lantern slides by members and others were shown to a very crowded audience in the Theatre of the Society of Arts. The remaining papers were read on Wednesday from 2 to 5.30 p.m. The members and friends dined together at the Criterion Restaurant. In another column we comment upon the photographs exhibited in the club-rooms by members, and also give a short report of Tuesday's proceedings.



## HOME PORTRAITURE.

IN attempting portraiture in rooms not specially built for that purpose, the great difficulty to contend with is want of light, and power to control what light there is. The light streaming in from a narrow window which has not always an uninterrupted view of the sky gives a somewhat bright illumination to one side of a sitter's face, and the other is in somewhat dark shadow, and as the shadow side of the face is illuminated by light reflected from surrounding objects, such as dark-coloured furniture, or frequently somewhat yellowish paper, etc., the sensitive salt of silver in our dry plate has a tendency to exaggerate this shadow, and without an inordinately long exposure we get "soot and whitewash" results, or, in other words, one side of the face bare glass without any detail, and the other side very dense, so that to obtain the detail in the latter in the print we over-expose the former, and the print is too harsh. To modify this state of things must be our great endeavour, and we shall see how to do this in lighting, or rather placing of sitter, and also by the use of reflectors. Now, reflectors may be of too kinds, which we may call the small and intense, such as a mirror, and the large and diffused, like a sheet; the latter will be found of far greater service than the former, and to be of service must be of large size and properly placed; of sufficiently large size to be placed not only on some support, but also to be spread out on the floor. A convenient support for this reflector is the domestic clothes-horse. We may as well digress here a moment, and give one hint to all would-be home portraitists, and that is, make friends with the ruling spirit of the house, whether wife, mother, or sister, as to turn out decent work means some upsetting of the room and utilisation of household property; so first of all get on the right side of the powers that be, and secondly always clear up after you, put things back, as far as lies in your power, in the position you found them. Ladies will always look with disfavour on anyone who turns the place upside down, and even when "you men" put curtains, chairs, etc., to rights, the gentle hand must give the final arranging artistic touch.

Curtains are sure to drape the window, so these must be pulled right back, and pinned or held back by a chair, etc.; blinds, venetian or otherwise, must be pulled right up; and finally, windows must be clean—a dirty window will stop out 50 per cent. of the light sometimes. If the windows are of the French fashion, that is opening out or in like a door, open them wide, if not too cold. Finally, when necessary, use a reflector outside the window—we all know how snow on the ground lights up the room, so use a reflector, and use a big one; we daren't suggest putting a sheet out, because this might get us into serious trouble with the ladies, but "we are free to confess" that we do it, though under protest from somebody.

Our notes have hitherto had special reference to head or bust portrait work. When it comes to full-length, we get another question to consider, that of suitable accessories, and when considering the subject of posing, we shall note a point or two which may be useful, as very fine results may be obtained by taking a portrait of anybody engaged at work, or seated by the fire, or reading, writing, etc., and in such cases the picture would be incomplete without the actual and necessary furniture in the room, and in this case too we may admit the otherwise inadmissible wall paper.

Without going to any outlay, a capital background, especially for children, is the screen to be found in so many houses, and the same may also serve for the support of a ready-made background which may be found in every house, namely, a blanket; or the screen may be used to support the reflector.

## Letters to the Editor.

## EXPOSURE v. DEVELOPMENT.

SIR,—The letter which appeared in your issue of March 27th, upon the hydroquinone developer has naturally interested me as a worker of this chemical for the last six years or more. I can endorse the opinion that a strong solution is not the best to employ for bromide paper, as it certainly has a tendency to make the picture coarse. Moreover, there is the important consideration to bear in mind, that the hydroquinone developer has a more energetic action when air is allowed to come in contact with the film during the progress of development. There should, on this account, be a plentiful supply of the solution over the film.

The letter of Messrs. Hurter and Driffield evidently gives the convictions to which their interesting experiments have led them; at the same time, many of us would be interested to learn if all their plates were developed with the ferrous oxalate developer. Certainly that developer has the name for allowing the least so-called "latitude in exposure," and the conclusions drawn from the sole use of ferrous oxalate might be different to those arrived at with some other developing agent. I quite agree that the best results are obtained by correct exposure. But we must first decide what correct exposure really is. For instance, a certain duration of exposure will give a perfect negative with a definite developer—that is to say, a developer compounded in certain proportions—but if we were to vary the proportion of the chemicals in the developer, we should by no means secure the same result in the negative with the same exposure. It would seem from Messrs. Hurter and Driffield's experiments that a developer is used of unvarying proportions and the exposures regulated from that stand-point.

I can agree with them that if the light has had insufficient time to impress the plate it will be impossible to get an image, no matter what the developer may be; but on the other hand I am not clear that I comprehend their meaning in the expression "that nothing you could have done in development, or can do subsequently, will remedy a false relationship in the gradations established by the light alone." At any rate, to take a case from my note-book, I exposed two plates, one directly after the other, giving them the same time in exposing, on an out-door view. On developing the first, with my standard hydroquinone solution, I find the plate has had double the necessary exposure. Taking now the second plate, and altering the proportions of the ingredients in the developer, we find on finishing developing, that we have a good printing negative, and without any sign of having been over-exposed. I have several such pairs of negatives, and whilst one shows complete over-exposure, the other is quite satisfactory. This being so, it does not appear to me that any false gradation is apparent, and as long as we can secure a good print from any negative I do not see what more is required.

I must ask your correspondents to excuse me if I have not understood their statements, as I fear I may not have done, for they also indicate that intensification is a failure. There are many of us, I think, who have managed to get a good print after intensification, that would not yield a decent print before. Thus, even if the gradations are not altered, we do, nevertheless, secure what we seek; so perhaps some further information as to the matter may help to make the statements better understood, and as the subject is an important and interesting one, no doubt others will offer their experiences.

There is one remark in the letter of your correspondents that would be desirable to explain; I refer to the suggestion as to quality in plates (which I thoroughly endorse), and the consequent capacity for an amount of latitude in exposure. What, therefore, is the latitude that is considered will enable one to obtain good results?

I think Mr. Stanley C. Bright is fairly on the right track. — I am, etc.,

April 6th, 1891.

C. HETHTON LEWIS.

SIR,—I have read the letter of Messrs. Hurter and Driffield your last issue with much astonishment. The assertions that errors in exposure cannot be modified in development, and that an over-exposed plate remains an over-exposed plate and *ergo* practically a failure, are so completely opposed to my own experience that I beg to be allowed a few words in reply. The



baneful influence of such teaching is more likely to result in many beginners placing their cameras either on the shelf or in your sale column than anything else. A very large number of failures are undoubtedly to be attributed to the craze for that almost automatic simplicity in development, the one-solution developer. I would advise "E. A. D.," however, to take courage and persevere, and remember that a ready-mixed developer consists of developer, accelerator, and restrainer, and these must be modified more or less according to subject and exposure, the first named giving density, the second detail, and the last preventing fog and sufficiently retarding development to enable printing density to be obtained, some plates requiring more restrainer than others. From this it will be at once evident to the simplest mind that in the case of over-exposure the mere addition of water is not what is required to produce a successful result, but increase the first and third according to the amount of over-exposure; by adding water you are *reducing* the strength of the first and third, instead of *increasing* them at you ought to do. I should strongly advise "E. A. D." not to use ferrous oxalate for outdoor work, on account of its allowing but little latitude in exposure compared to pyro or hydrokinone, but preferably the former of the two, which in my hands I find produces the best average results. The great thing is sufficient exposure; under-exposure is hopeless, but a much over-exposed plate can generally be brought up to a fairly decent negative by judicious development. The coolness with which these gentlemen throw overboard, according to their own admission, the great authorities on development, is really charming; perhaps they will kindly tell us, as the great authorities are so untrustworthy, whose teaching among the smaller lights it would be safe for a beginner to follow.—Yours truly,

April 4th, 1891.

EDYLLION.

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#### CELLULOID TO FOCUS ON.

SIR,—I have just fitted to my 12 by 10 camera a piece of England's celluloid film, non-sensitised. Apparently it succeeds perfectly, and is a more perfect texture for focussing on than ground-glass. I shall give it a month's trial at Aix-les-Bains. In travelling, my ground-glass is constantly getting broken. I trust I have found a remedy.—Yours faithfully,

April 6th, 1891.

GEO. H. VERNEY (Lieut.-Col.)

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#### NATIONAL PHOTOGRAPHIC EXHIBITION, APRIL, 1891.

SIR,—Owing to the decision of the Liverpool Photographic Exhibition Committee to keep their exhibition open until the 11th inst., and as many of their exhibits are entered for the Crystal Palace, I beg to inform you that it will be impossible for the judging here to take place before Thursday, April 16th.—Yours faithfully,

S. G. BUCHANAN WOLLASTON.

Crystal Palace, S.E., April 6th, 1891.

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#### PHOTOGRAPHY IN NATURAL COLOURS.

SIR,—It appears to me that the difference between "Farbenlehre" and myself is not so much, is photography in natural colours possible? as, what is photography? I may be a little hypercritical on this point. For instance, if you take a negative and retouch it until there is as much pencil-mark as anything else, I do not call the result photography; or if you take paint, or any chemical substance, and daub it all over a platinum or bromide print, I do not call the result a photograph. In like manner, if you cunningly prepare a plate in different thicknesses of silver salt, and then place it in a dark-room and direct a tiny ray of light, passed through a prism, and filtered through coloured glass, in such a way that each of the component rays falls on the portion of the plate specially prepared for it, I do not for the life of me see how the result can in any sense be called a photograph. Or even if the film is homogeneous, and the varying thicknesses are produced by the chemical action of the component parts of the ray admitted one at a time, or by the subsequent action of the developer, still I cannot see where the photography comes in. You will observe that I am admitting that the results claimed have actually been obtained, though the evidence of this is very slight indeed. But photography, that is to say the photography that can make a representation of external phenomena, depends entirely on actinism, or on the relative intensity of the light reflected from the various portions of the scene. But colour is not actinism at all, although it affects the actinic force of light, as

humidity does, and it is just as reasonable to expect it to appear on the plate as to expect the various degrees of solidity to appear. To photograph a colour is to photograph a property, and if it can be photographed, then any other property of a thing which possesses chemical action can also be photographed, such as its relative degree of heat or cold. Light and dark, on the other hand, are not properties, but merely reflections from something else, and these reflections it is that are really photographed, not the thing or its properties.

Casati bases his statement on the best possible grounds, viz., that the language of the natives in question, though very comprehensive and complete, has no words for any other colours than white, black, and red. I have sold coloured beads and blankets to all the tribes of natives between the Victorian Falls of the Zambesi, and the Orange River, and Natal, and I know that these tribes have words for a great many colours.

I do not wish to be uncivil, but I am afraid that I must inform your correspondent that he is very much at sea as to the meaning of philosophical terms. Subjectivity has but one meaning, and that a very strict and exact one. It implies the non-existence of the phenomenon outside of the subject. If the distinction between subject and object is not sharply defined, all philosophy becomes impossible, unless the words are used in the Hegelian sense of the identity of opposites, wherein the only existence is in the union or relation of two opposites. The sentence "The subjectivity of a phenomena has no existence outside the object," has no conceivable meaning. Even if the word object is a misprint for subject, it still has no meaning, for it is the phenomenon, not its subjectivity, that has no existence. Again, the sentence, "It cannot be impossible to so arrange noumena as to present precisely the same subjective phenomena," has no meaning. The noumenon is the essence, the soul, the *ding an sich*, of which the phenomenon is the objective manifestation. Finite beings cannot, in the nature of finity, attain to a knowledge of things in themselves, and cannot therefore arrange noumena, or take any other cognizance of them.

#### EXPOSURE 2. DEVELOPMENT.

I notice a letter from Messrs. Hurter and Driffield, in which they say that an over-exposed plate must always remain an over-exposed plate. Surely they cannot have experimented much. I possess a negative on the fastest plate in the market, Paget xxxxx., which was exposed on a fairly open view with an R.R. lens stopped down to *f*/32 in a bright sunshine at noon on a May day for ninety seconds, and it makes a very good print. Another, precisely the same, exposed at the same time for thirty seconds, is absolutely the best negative in my possession. If I had them here I would send you prints. The secret is to soak in plain pyro solution for a few minutes before commencing the development.—Yours, etc.,

G. LACY.

SIR,—The following is weighty evidence in support of Mr. Lacy's view of the subject:—

In a lecture which Prof. Du Bois-Reymond lately delivered at the Berlin Academy of Sciences on "Science and Art," this celebrated physiologist says: "As for photography in natural colours, which both artists and amateurs are always dreaming about, we must confess that there is practically nothing to be expected in this direction. It is almost impossible that experiment should ever prove the theoretical reasons for this conviction to be false, so that the problem remains insoluble both in the immediate and in the most distant future."—Yours truly,

Vienna, March 29th, 1891.

HOUSTON S. CHAMBERLAIN.

SIR,—I am frequently asked, "Have you heard that photographs can be done in natural colours?" My reply is, "Certainly; I have heard it any time during the last thirty-five years." I am as old a photographer as "An Old Parliamentary Hand," Surg-Major Mantell, but I should be very sorry to jump to the conclusion he does, that photographs will never be taken in natural colours, nor am I one of those "who love controversy for its own sake." Can Surg-Major Mantell recall the time thirty-five years ago, when, before collodion came into general use, both he and I and many others were working with waxed sensitised paper and developing with gallic acid, and vacillating between this process and the positives on glass. Can the photography of the past compare with the magnificent results of the present; and who shall say what the development of photography will be thirty-five years hence, with the possible result that some mechanical



means will be devised making photography in colours as easy as our present black and white art? Are not the scientific marvels of the present age, such as speaking between London and Paris, and perhaps before long between London and New York, sufficiently startling to make it impossible for any human being to prophecy what will be the marvels of the next century. And most certainly photography in natural colours may be one of them; and when the back numbers of the AMATEUR PHOTOGRAPHER are eagerly perused by the photographers of say 1950, then and then only will it be decided who was on the "winning side."—Your obedient servant,

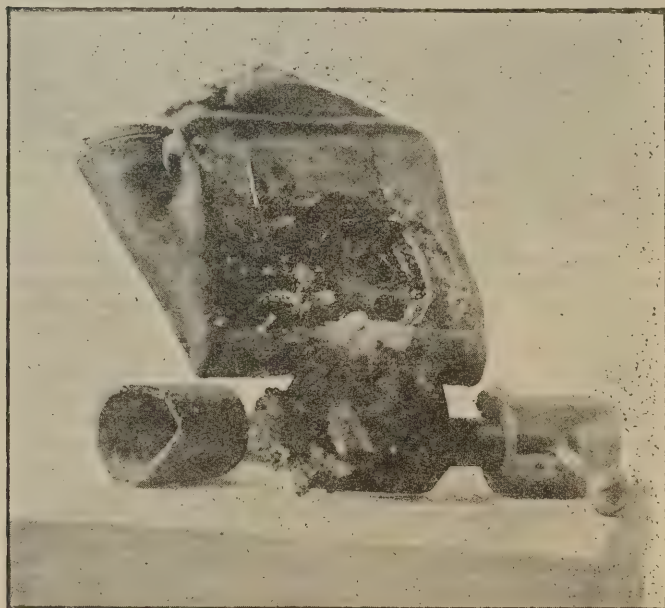
GEO. H. VERNEY (Lt.-Col.)

April 3rd, 1891.

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#### EXPLOSION OF A REGULATOR ON AN OXYGEN GAS CYLINDER.

SIR,—Could you or any of your correspondents explain the following? On Saturday evening, March 28th, while getting my lantern ready for exhibition, I had attached the tubing to the oxygen cylinder, but found it was leaking at the coupling. I had to readjust this several times, and, of course, each time turning on and off the gas. The last time I turned it on, the regulator, which was of the bellows pattern, or exactly like an oxygen bag, exploded with a very loud report equal to a four bore gun, accompanied with a flash of light at least fifteen inches in diameter. Naturally I jumped back several feet, but at once turned off the gas, but in the few seconds of time a portion of



the metal was fused (I send the regulator for your inspection). Now, there was no light nearer than the gas light in the hall, ten feet off, and we know oxygen is not inflammable of itself, nor was the hydrogen turned on, so what could have caused the explosion with combustion? No doubt pressure would have caused the collapse of the regulator, but whence the fire unless there was friction caused by expansion and some sparks thus generated? The fire must have come from within, as you will observe that the hole is burned from within to without.—Yours truly,

April 2nd, 1891.

HENRY D. BRANDRETH.

NOTE.—We refer to this matter in "Our Views." The illustration is from a negative taken by ourselves. We shall be pleased to show the regulator to callers on Monday next.—Ed. AM: PHOT:



**A Substitute for Gutta-Percha.**—Senhor da Costa, a Portuguese scientist, is reported to have discovered an excellent and widely-distributed substitute for gutta-percha. It is the solidified juice or sap which flows from the nivol-cantern, a shrub used in the Concan district of British India for making hedges. Senhor da Costa states that it is insoluble in water, softens with heat, and becomes hard again when cooled. It can be readily moulded into any shape or can be cast into very thin sheets, and can also be used for taking sharp and minute impressions. Like true gutta-percha, it is white when it issues from the tree, turning chocolate colour on drying.

## Exhibition of Members' Pictures at the Camera Club.

THE first exhibition of pictures in the new rooms of the Camera Club was opened on Monday, and if there may be, perhaps, some faults to find and some aspirations unfulfilled, on the whole the exhibition may be considered to be satisfactory. As a gallery for exhibition it can scarcely be said that the large room at the Club is well suited for the purpose. The hanging space is not large, though large enough for the number of exhibits this year; the light is very far from good, the cross lighting by day being, on one long wall at least, extremely aggravating, and not sufficiently strong and concentrated by night. A system of screens at right angles to the windows would, we think, be advisable, and large numbers of the smaller pictures could be advantageously displayed if the Club were to furnish a certain number of the very convenient shutter frames similar to those used at the South Kensington Museum, which are either hung round standing pillars or pedestals or affixed to the walls.

This year's exhibition is by no means a large or a representative one. Amongst the most important pictures are many which we have seen before, either at Pall Mall or published in one form or another. Many prominent members, such as Messrs. Austin, Clark, Gale, Cembrano, Wilson Noble, Rev. F. C. Lambert, and Captain Abney, do not exhibit at all, and Mr. H. P. Robinson, Mr. Wellington, and Mr. Wilkinson show but two pictures apiece. The time of year will no doubt in some measure account for this; last year's work being known and this year's scarcely begun yet; at the same time, some of the best work may have been sent to Vienna. It is curious to observe that although the Camera Club does not pretend to be solely an artistic club, but to include science also amongst its pursuits and workers, technical science is here represented by a solitary frame of Mr. Andrew Pringle's pet microbes. This condition of affairs may, however, be said to be chronic, and is not confined to the Camera Club. In the opposite direction the Photographic Society of Great Britain, which considers itself to be distinctly a scientific society, takes art under its wing in a supplementary manner only; yet what do we find at their annual exhibition? Everything in the direction of picture-making and the science exhibits almost *nil*. We must conclude, then, that the members of the Camera Club do not sufficiently interest themselves in any of the very many ways in which photography is applied to the sciences, or in the numerous and beautiful methods of photogravure, or in portraiture to any great extent. The work seems almost exclusively limited to landscapes, more or less tempered by figures, accidental or otherwise.

With regard to the quality of work exhibited, we feel bound to say that, considering the amount of tall talk indulged in since last autumn, which must have implied a corresponding amount of study and experience, the results are not commensurate with our expectations. We have a right to see within a reasonable time some proofs of the possibilities and capabilities of photography so much talked about by admirers of the new school; but that time has not yet, it would appear arrived, at least, as regards the Camera Club. With the exception of a few of the pictures which have already been exhibited elsewhere, there is here scarcely anything above the average; it would be unkind, of course, to be precise with regard to what is below. Still, we cannot help wishing, in the first place, that there were not so many abstentions amongst prominent workers, and next, that the new-comers of merit should be more numerous.

The phrase concerning the comparative absence of albumenized paper is becoming almost a stock one now in our reports of exhibitions, and the present exhibition is no exception to the rule. There is, on the other hand, a considerable variety of printing papers fairly well represented. The roughest sepia platinum, Fry's rough bromide paper, carbon, Scholz's rough paper, home-sensitised silver papers, toned with platinum, and matt-surface gelatino-chloride; all have their admirers. On the whole, it is evident that the extra rough surface papers receive from the hands of many workers careful attention; in other hands their use, it is probable, will be limited, and is scarcely to be recommended.

It will be hardly possible within the limits of a short article to



deal more than generally with a few of the more prominent pictures; for the rest, also, at the time we are writing the walls are, we are told, not yet filled up, and titles and names are still wanting.

The Honorary Secretary, Mr. George Davison, exhibits several pictures which have previously been exhibited at the Club and at Pall Mall, and we cannot say that the selection is by any means a fair sample of his best work. There is, however, a very effective small picture of some marsh land with a clever evening sky, and another which is in many ways a charming composition of a swift flowing river running under a picturesque old bridge, with a countryman who has taken his horse in it to drink. Possibly a captious critic might find fault with the lighting or with the figures, but there is too much that is good in the picture to tempt us to assume such an unenviable role. Mr. Henry Stevens' well-executed large flower subjects are well known, admirable as is the technique in every way; and so again are his home pictures with his *model* dog. He shows, also, some large transparencies, and no one could show better. Mr. Maskell's two pinhole landscapes on extra rough paper are striking examples of his method of working; in the left-hand one, with the reeds and rushes in the foreground, the clouding is a little too pronounced, considering the tone of the water, but this is possibly a slight error in the particular print. Both are certainly pictures which will attract attention. He exhibits also four or five others, mostly of strong sunshine and mist combined, in which the landscape and atmospheric effects atone for what faults we might be inclined to find with the figures.

Mr. Topham's long panoramic views of Alpine scenery show, we cannot help thinking, faults of carelessness, both in the joining and in the unequal colour of adjoining sections, which ought to have been avoided.

It is sufficient to mention Mr. Wellington's beautiful "Even-tide," as it is well known. His other picture, an enlargement, with sheep, is decidedly inferior.

We naturally expect a good picture from Mr. H. P. Robinson, and we get it. It is sufficient to say that it is thoroughly obinsonian, minute in detail, and clever in composition.

Mr. Gambier Bolton exhibits his famous kittens and his bulldog. He is a master in this line, and in saying this we say all that need be said.

Mr. Horsley Hinton's two large pictures are so good that they are sure to attract attention: at the same time the coast scene with figures is, we venture to think, absolutely spoilt by the obtrusive and falsely lighted sky. In the other the luminosity in the shadows is to some extent remarkable, but the sky, again, might be improved. Altogether, however, it is a good picture, and a word may be said for the printing method, which is silver on extra rough paper toned with platinum.

Mr. Thorncroft exhibits two frames with prints on extra rough paper of a curious blue colour; we are unaware what the process may be.

Mr. Gibson's church interiors are good technically, but hardly of general interest. From a pictorial point of view these subjects have never yet, we think, been satisfactorily rendered.

A word for Mr. Bright's comic little Diogenes in his tub (a tiny little picture in the corner near the entrance), and we think we have said nearly all that our space can afford to be said concerning this exhibition, which, on the whole, is one upon which the Club is entitled to congratulate its members.

The Club is to be congratulated on possessing amongst its members an artist of such talent as Mr. Burchett. The two charming figure subjects exhibited by him are admirable examples of what artistic photography can produce. We have no hesitation in saying that, in their way, they are as fine as anything that has yet been done. The "Belle Bretonne" is a graceful, simple figure of a girl admirably posed, with no suggestion whatever of the dressed-up model. It might be hypercritical to ask the question, but still—is she Bretonne or might we find her in London, an innocent English maiden? The other picture is a portrait, an English gentleman clad (and why not?) in a fine suit of sixteenth century etched German armour. We recommend both these pictures to the attention of the professional portrait photographer and retoucher. What retouching they have received has not been overdone; it is artistic and entirely different from the stereotyped professional method, the modelling not destroyed or obliterated, or falsely lighted, as is too often the case—in short, it has been done by a true artist hand.

## Thursday Evenings at the Camera Club.

(BY ONE OF OUR STAFF.)

SIR GEORGE PRESCOTT presided at the meeting of the Club on Thursday, when Mr. Sturmev gave an interesting lecture, illustrated by numerous lantern slides, descriptive of his trip to Norway with the Vesey Club. The negatives from which the slides were made were taken in a hand-camera, and Mr. Sturmev advised the taking of a wide-angle lens, without which he believed it was often impossible to give an adequate idea of the grandeur of the scenery. The light he considered to be twice as quick as that in England.

The Chairman said he had been to Norway a considerable number of times, and the route he should recommend would be by steamer from Hull to Trondjeim, and thence to Christiana. Norway was a splendid place for a three or four weeks' holiday, and the best time to go was in June or July. The visitor to Norway should also be careful to provide himself with a gimlet and mosquito net.

Mr. Sturmev said it was very wet during his visit, and the mosquito net was not necessary.

The Chairman pointed out that mosquitoes were most troublesome inland; the salt water seemed to keep them away from the coast.

Mr. Sturmev said it was well to go on the visit as early as possible, as in July and August the country was overrun with tourists, accommodation was difficult to get, and the roads were an inch or two deep in dust.

Major Nott protested against the advice to use a wide-angle lens, which he believed was the cause of much of the adverse criticism made by artists upon photography. The wide-angle lens would not give an effect of grandeur, and it was far better to get in that part of a view which the eye could see, and trust to the dimensions given in that portion to convey the idea of the grandeur of the scenery.

Mr. Sturmev demurred to the idea that he had recommended the use of a wide-angle lens only, but in many cases it was impossible to get sufficiently far back to get in more than a small bit of the side of a mountain, which conveyed no idea at all. This was specially the case in the fjords.

Mr. Davison remarked that it must be well known by those who used the wide-angle lens occasionally that it would so misrepresent a place that people who had been to the place frequently would utterly fail to recognise it.

The proceedings terminated with the usual votes of thanks.



"Adams and Co.'s Photographic Annual, 1891."—This book is issued annually, and in sending it to us Messrs. Adams say "that the first edition of 5,000 has cost us a fraction over 2s. per copy. \* \* \* Will you kindly state that the sale price is 9d. post free."

From this it will be seen that Messrs. Adams and Co. are dealing liberally with their customers. The first use of their "Annual" is to give to the photographic world their catalogue and price list, which is most complete and admirably arranged. Messrs. Adams are dealers, and stock almost every maker's goods; they have now in their new show-rooms such opportunities of showing goods that buyers can make, with the aid of the "Annual," their list out, and call and see the goods under the best advantage. In many things the prices are cut very fine; for instance, many photographic publications are sold at a discount, and almost all are kept in stock. The second use of the "Annual" is to give to those who are fond of photographic literature some capital articles which have been contributed by Capt. Abney, Major Nott, Professor Burton, Messrs. H. P. Robinson, W. J. Harrison, A. Pringle, W. D. Welford, Chapman Jones, F. Howson, H. Snowden Ward, Lyonel Clark, E. A. Gollidge, A. S. Newman, B. F. Wilkes, E. J. Wall, W. Wilkes, W. Birt-Acres, and George Davison. All these gentlemen are well known, and something may be learned from every article. The hints on the lens, the dark-room, exposure, developers, intensifying and reducing, silver printing, instructions, formulae, &c., are all arranged by "one who knows." Perhaps from Messrs. Adams and Co.'s point of view the feature, certainly the novelty, is to be found in the portraits of several editors of photographic journals who have lent their counterfeit presentments to embellish Adams and Co.'s Photographic Annual for 1891. The book is on sale either at 81, Aldersgate-street, E.C., or 26, Charing Cross-road, or it will be sent, as before mentioned, by post for the "nimble ninepence."



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER VIII.

*Fig. 15.*—As this composition consists of a single figure, I shall notice here the method Metzú has taken to render it a part of the whole, especially as we shall have to refer to other plates, when we come to treat of light and shade, and



FIG. 15.—METZU.

colour. The figure is dressed in black and white coming in contact and contrast in the strongest manner; the black is repeated by the hat, and diffused by the black marble in the floor, the white is referred to the white marble in the floor and collected into a mass by the white wall; the carpet, which is of red and warm colours, focussed at the light by a stick of wax, is repeated by the back of the chair, and carried up by the outside of the window on the edge of the picture, which is painted of a pale red; the forms are echoed and repeated with the same simplicity, and the picture frame on the wall, from being smaller than the frame of the window, serves at the same time to assist the perspective effect: even the fastening of the casement is not without its use in the composition. In thus obliging a design to depend on its ground for support, consists the principle of union and harmony; but, as I have at present only to draw the student's attention to the arrangement of form and that portion of composition that arises from the repetition and connection of lines, I shall notice one good plan amongst many others, which is, to mark in strongly those points in the ground which of necessity must be introduced from

natural circumstances, at the same time contriving the group so that those points become of the greatest consequence to the composition. This often gives a characteristic stamp of nature to the whole.

*Fig. 16.*—We have here the strong dark point coming in contact with the light ground in the most cutting manner, which is more naturally accounted for by its being the most projecting; as it is the inside of an empty drinking cup, it perhaps indicates the commencement of the story as well as any other means.

*Fig. 17.*—Ostade's pictures have the peculiarly valuable property of looking well at a distance, thereby attracting the attention of the spectator towards them. When we come nigh to examine, we find that this is produced by their possessing a decided mass of light, obtained by means of a light wall, sky, etc. His heads and hands form a number of luminous spots in a mass of half tint, and are rendered of more value by the introduction of blue and dark draperies; this requires much consideration, in order that those spots may take agreeable and decided forms to prevent confusion. In Ostade's works it is rendered the more easy, as he has seldom any particular story to interfere with the arrangement. His pictures call to my mind a passage in Hervey, which appears like the language of a painter, so completely consonant is it to the principles on which he constructs his work. Speaking of the stars, Hervey says, "On a careless inspection, you perceive no accuracy or uniformity in the position of the heavenly bodies, they appear like an illu-

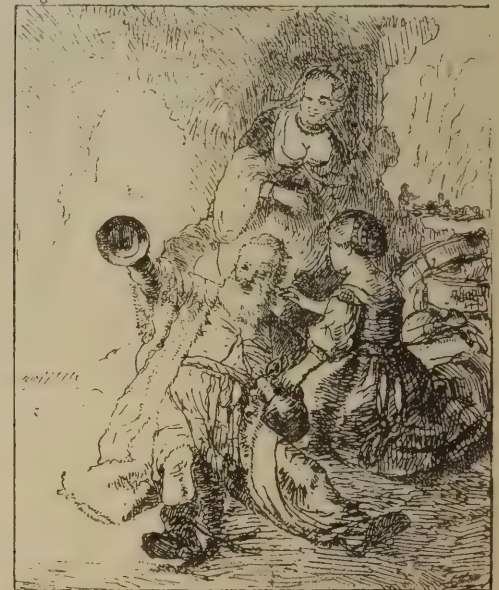


FIG. 16.—REMBRANDT



FIG. 17.—A. OSTADE.

trious chaos, a promiscuous heap of shining globes, neither ranked in order nor moving by line; but what seems confusion is all regularity; what carries a show of negligence is really the result of the most masterly contrivance."



Unity is one of the essential elements of good composition. Fig. 15 is an example of how very small things unite to produce harmony. As we shall have further opportunities of studying this part of our subject when we come to *Light and Shade*, we will leave it for a time. Figs. 16 and 17 also require no further comment, except it may, perhaps, be pointed out that they are ignoble subjects redeemed by art. They are both examples of pyramidal composition, and strong insistence is shown in the value of balance, in the cup in the one sketch, and the pig and basket in the other.

(To be continued.)

## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

THE sixth monthly meeting of the Edinburgh Photographic Society for the present session, held on Wednesday, 1st inst., and presided over by Mr. W. T. Bashford, Portobello, one of the Vice-Presidents of the Society, was devoted to a lantern exhibition by Professor Hunter, Edinburgh, of photo-micrographs of yeast and allied organisms, bacteria, etc. The Professor, who is an expert scientist and a very fair photographer, gave a most full description of the slides he showed, which were about sixty in number. He had, he said, no intention to go into the subject scientifically, but merely to show the characteristics of yeast and of a few of the bacteria which have been studied in man and the lower animals. Nevertheless, he crammed as much scientific information into his remarks as it has ever been the lot of almost any of the members to hear in the same space of time. The first slides were pen and ink sketches, which were good so far as outline was concerned, but when he came to slides prepared from photographs, everyone at once saw the great superiority of the latter, every detail in the formations being apparent. It was instructive to see the different forms which the yeast particles take in the various forms of that commodity, such as brewers' and bakers' yeast. Specimens of the same varieties were shown in the early stage of fermentation, when fully ripe, after they had passed the ripe stage and the cells were empty, and subsequent to that stage, when they had gone altogether bad and useless. The beginnings of vitality, when the cells were budding, and the later stage of the emptying of the cells, were the most interesting, and the fact that these processes can be shown by photography as clearly as, if not more clearly than, when under the microscope, marks photography as one of the most reliable handmaidens of science. In connection with these slides, Professor Hunter explained, when treating of the cell outlines, that the clear, well-marked lines shown did not actually exist. Nothing in nature, he said, was seen actually as it is. The cell walls are invisible, or at least they occupy so small a space as to be unrecognisable and the lines which were seen were due to the refraction of light, the same as in an air bubble. In some of the specimens the bacteria which develop in yeast were shown, and these, it was explained, are the same as are found in milk when it turns sour. It was believed to be due to these bacteria, he said, the Scotch bread has the peculiar sharp flavour which is missed in bread baked in southern countries, the Scotch bakers being in the habit of using a yeast which develops quickly. A number of plates containing bacteria alone, including those which produce the deadly anthrax, the harmless bacteria of natural decay, and the bacteria of influenza were shown. These, it was explained, could all be destroyed by dry heat, but it was a mistake to suppose that they could be destroyed by boiling, as some of them could, in the spore state, which seemed to be a condition they went into when nutriment failed them in one subject, survive a good deal of boiling. The presence of some forms of bacteria in food was objectionable, although they were always more or less present. Were, for instance, a gourmand to see under the microscope a partridge, which he delighted to have in a somewhat "high" condition, before eating, he would "swither" a little before putting it into his mouth. Of course, roasting killed the bacteria, and he then had the advantage of eating the small with the great, and so got double nutriment. Professor Hunter protested against the use of the word "photo-micrograph," illustrating his objection by pointing out that the corresponding word

for stellar photography would be "photo-stellargraphy," which would be misleading. The one should be "micro-photography," and the other "stellar-photography." The chairman, on behalf of the members, thanked Professor Hunter for the entertainment he had given them. Thereafter, two ordinary members, one of whom was a lady, were admitted, and the following were admitted honorary members of the Society:—Professor Hunter, Edinburgh, the lecturer of the evening; Professor Coleman Sellars, Philadelphia; Professor Meldola, London; and Dr. Eder, Vienna.

The Leith Amateur Photographic Society, besides being an active body, must be a popular one with outsiders, and worthy of the attention of manufacturers. At their usual monthly meeting on Tuesday night, the Fry Manufacturing Company distributed among the members specimens of their sixty-times plates, celluloid films, ivory films, bromide paper, and opal paper. Mr. Wm. Dougall presided at the meeting, and the business before them was to hear a paper by Mr. Robert Hunter, on "Limelight Exhibitions." Mr. Hunter's paper was a practical production, specially applicable to their own association, but it contained hints from which other associations might profit, such, for instance, as the recommendations that slides intended for exhibition should be properly labelled and described before being handed to the Secretary, that the slides should be sent in at least a week in advance of the meeting at which they are to be shown, and that a screen, paper-faced or otherwise, perfectly opaque, should be employed, so that no light should filter through it in the showing of the slides. It was reported that the Society's meeting-place in Duke Street is required by the firm adjoining, and the Secretary was empowered to look out for another room in which to hold their meetings. The meeting also agreed to hold an outdoor gathering on Monday, 20th April, the Edinburgh and Leith spring holiday, the place selected to be visited being Arncliffe, where there is one of the prettiest dells in Scotland, in which there is boundless opportunity for charming pictures of wood and water, as well as general landscape. It is to be hoped that the opportunity of visiting this somewhat private spot may be largely taken advantage of.

Another honour has fallen to the Leith Amateur Photographic Society in the obtaining, by Mr. A. Pitkethly, an AMATEUR PHOTOGRAPHER Silver Medallist, of a prize silver watch which was offered by the proprietors of the *People's Journal* for the best letter treating of "Amateur Photography." In giving his award, the competition editor says:—"What was wanted was such particulars regarding the best and simplest kinds of apparatus, their cost, etc., founded on the writer's experience, as might be useful to those beginning the art. From this point of view, the best paper is that written by Mr. Pitkethly." A Society which contains such members as the Leith amateur photographers are showing themselves to be can only have one movement, and that is forward.

Mr. F. Dundas Todd, an enterprising Edinburgh photographer, lectured on "The Art of Photography," to the members of Bonington United Presbyterian Church Young Men's Society, Leith, on the evening of Tuesday, 31st ult. Mr. Todd's remarks were of an historical nature, and were put together in a way that was both interesting and instructive. Lantern slides were shown of the portraits of the inventors of photographic processes, as well as of the bacilli of consumption, scarlet fever, splenic fever, and cholera. In entering as a competitor, Mr. Todd said, with the pictorial arts, photography was weighted with many disadvantages. The problem of photography in natural colours, much as had been heard to the contrary of late, still remained unsolved, and it was futile to compare the products of the camera with those of the brush and palette, since the charm of a picture often consisted of its beautiful colouring, but in the monochrome methods of expression, photography was held by many to occupy the premier position. To illustrate his remarks on this part of his subject, Mr. Todd showed several slides of landscapes, and also views of fishermen baiting their lines, a "stimie" at golf, and a picture of two young ladies, entitled "Confidences," which was taken by flash light. Mr. Todd, it may be mentioned, is in course of finishing an extensive series of photographs of Gosford House, at Longniddry, the newly erected palatial seat of the Earl of Wemyss, who was so long known to the volunteer world as Lord Elcho. These photographs, both interior and exterior, have been produced by Mr. Todd with much artistic skill, and are, many of them, works of art. Through his generosity, it may also be stated, some of them have already been used for newspaper illustration.



## Notes for Novices.

### THE DARK-ROOM LIGHT.

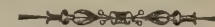
PROBABLY the consideration of the fitting up of a dark-room will be almost the first subject which will engage the attention of the novice. We intend, however, here to consider the question of a suitable illuminant. The most convenient, the safest, and the most regular is undoubtedly artificial light; daylight is at all times very fluctuating and uncertain, and it is important to have a constant and uniform illuminant, so as to be able to judge of the density of negatives, etc., and, moreover, there is much greater security in using artificial light, because such light is as a rule weak in the more refrangible and more actinic rays.

If daylight is used, and the window faces any position where it is possible for the sun to reach it, it is advisable to erect outside the window a moveable or permanent shield of wood, zinc, or corrugated iron, so as to prevent the access of sunlight. The size of the window, unless a dark-room be specially built, is generally determined, but the size of the window or panes of coloured glass may be decided by the operator, and about one square foot is quite large enough, although the quantity of light admitted is not of the slightest moment, provided the quality of that light is correct. The actual correct colour used for the coloured medium differs according to the bias of the authority who may be consulted on this point, some recommending stained red, others ruby glass, others again preferring orange and green glass—and others orange or ruby paper. We prefer paper when daylight is used; the ordinary orange-coloured paper and the deep ruby paper, when made translucent with vaseline, will give plenty of light and generally safe enough. A sheet of orange paper glued to a light wooden frame and then rendered translucent by rubbing with vaseline gives a very bright, good light, but when the window receives very bright diffused light, a second sheet of the orange or a sheet of ruby paper may be applied in the same way; it is advisable to have a third screen for use when working colour-sensitive or orthochromatic plates. We have found a special orange glass in the market which cuts off every vestige of light, from the ultra violet to D in the orange, and we have successfully worked very sensitive colour-sensitive plates by this light.

One of the greatest faults of all amateurs is in placing the light in such a position that it falls full upon the plate and the eyes of the operator. If a lamp be used, the lamp should be placed, not opposite the operator, but by his left side, so that his face is protected from the light, and the developing dish is also in shadow. When a window is used, an opaque screen of brown paper or wood should be so mounted that the operator and his dish receive no actual light; merely the light reflected from the walls and the diffused light in the dark-room should be used; then, when necessary to examine the negative, it may be momentarily held up to the light, but not close to it and only momentarily. There is no light which will not in time act on the film. If such a shadow screen be used, a very much brighter light may be used than without the same.

Now, whilst on this question, there are one or two points, on filling the slides, etc., which may be of service. First of all, always fill your slides in a weak, poor light. Very little is actually required to tell which is the film side of the plate. Always dust your plate before putting it into the slide. Some operators use a broad camel's-hair brush; we prefer a piece of soft wash-leather. A curious experience was related by an anonymous American writer last year on this point. He was very much troubled with pinholes, which the plate manufacturer stated were due to dust, and after repeatedly hearing this, the anonymous writer determined to be even with the plate-maker, and he very carefully dusted half the plate only, and on development the pinholes were still apparent and evenly distributed all over the plate. The question is, to what are the pinholes due then? We must defer giving our experience of these till later. It is always advisable to dust the plates, however, and also to dust the interiors of the slides. Having filled your slides, shut up your plate-box, and then taking each slide near the dark room light, open the slide shutter and see that you have the film next you. This will prevent any possible chance of the plate being the wrong way round; it is only necessary to draw the slide about half an inch. Having thus examined every slide, lock the shutter so that it cannot be pulled out by accident; this will also ensure

their being right home in the groove. These are but little details, but it is by attention to little details that we get perfect results, and such little things as these take up very little time and very little trouble. Always stick a piece of gum paper or a label over the edge of an opened box of plates, and write on it the number of plates removed and the date of opening.



## Apparatus.

### "COMPANION" HAND-CAMERA.

MESSRS. PARKER AND Co., of 288, High Holborn, in placing this camera on the market, announce that the idea they had in constructing it was to do away with much of the intricate mechanism

which only tended to confuse and irritate the users of hand-cameras, and often failed at the critical moment. The working of the camera (fig. 1) now before us is extremely simple; the turn of a screw with a milled head, and the lifting of a small lever about a quarter of an inch, changes the plate. The plates are placed in special sheaths, and are held in place by the small spring to be seen just

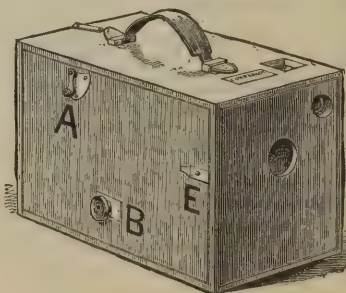


FIG. 1.

above the letter C in fig. 2. The reservoir being charged and returned to the camera, the first plate is in position for exposure which is given by pressing the lever E, the shutter being always set. The exposure having been made, all that is necessary to change the plate is to turn to the left the milled head at the back of the camera until a click is heard, and then to raise the lever A and return it to its first position. The plate then falls on its face at D. The exposed plates at D are prevented from falling when the picture is taken the vertical way, by tightening the screw B, which also prevents the back being taken out. The camera is fitted with a special rapid rectilinear lens, of  $5\frac{1}{2}$  in. focus, working at  $f/8$ , and rotating stops are provided. A light screen is fitted to shut off the light from the plates when the front is opened. The camera is well made and finished, and sells at £6 6s.

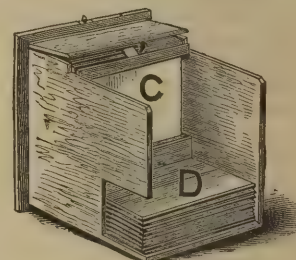


FIG. 2.

### THE "SCOTIA" CAMERA.

This camera, which is made by Mr. James Thomson, of Lintmill, Port Gordon, is of excellent quality and finish. It is very simple in construction, made of the best materials, and very light, but at the same time very rigid.



It possesses all the motions desirable in a camera, these being horizontal and vertical swing to the back, rise, fall, and swing to the front, and reversing back. The extension is a front one, but the back of the camera is made to slide to the front for the use of a W. A. lens, thus obviating the cutting off in the case of the base board projecting. The camera closes into very small space, the 15 in. by 12 in. being no more than  $3\frac{1}{2}$  in. thick when shut up. It is erected in a few seconds without the removal of a single screw. The prices are exceedingly reasonable, the cost of a  $6\frac{1}{2}$  in. by  $4\frac{1}{2}$  in., three double dark slides, being £5 5s., while that of a 24 in. by 20 in. is £2 15s.



## Amateur Photography.

BY ALEX. PITKETHLY.

WITHIN the limits of a letter such as this it is not possible to enter fully into the advantages to be derived from pursuing the fascinating pastime of "Amateur Photography," and at the same time comply with the lines laid down by the editor. I should have liked to dwell on its influence for good upon the health in taking us "far from the madding crowd" in search of the beautiful in nature, of its tendency to develop the mental faculties, how it quickens the perception of the eye, and enables us to place on permanent record the "faces we love and places we know," but, as space will not permit, I must take it for granted that these and the many other attendants of this delightful hobby are already appreciated by the readers of the *Journal*, and at once proceed with the subject proper of my letter. The first difficulty which presents itself to the individual hankering after photography is

### THE CHOICE OF APPARATUS,

the best size of camera and kind to adopt for outdoor work. To the beginner I would recommend that size known as half-plate, which yields a picture  $6\frac{1}{2}$  by  $4\frac{1}{2}$ , and my reasons for recommending this size are—the novice who purchases the smaller size of quarter-plate, or  $4\frac{1}{2}$  by  $3\frac{1}{2}$ , will, in nine cases out of ten, seek to dispose of it at the commencement of his second season, and purchase a half-plate, on securing which he will in all probability rest content, workers above that size being in the minority. A half-plate camera, with its necessary equipment, is quite sufficient for any ordinary individual to cope with on a day's outing, and in the hands of the beginner the "paying for your experience" is not so costly as it would be with a larger size, it more readily adapting itself to quarter-plates, which may be used until sufficient knowledge has been obtained to enable free use being made of the size of plate for which the camera is constructed. As to

### THE CAMERA

itself—do not go in for extreme lightness, as this in many cases means flimsiness; a little extra weight may be found advantageous rather than the reverse. See that the camera possesses a bellows of sufficient length to rack out to fifteen or sixteen inches, thus enabling the use of a long-focus lens, and at same time making it useful for copying purposes. To secure such an extension the camera should have a telescopic base board, the movement to which is given by means of rack and pinion, or winch screw. The camera should be square in rear, and provided with a reversing back to enable the plate to be changed from the horizontal to the vertical position, or *vice versa*. It should also be provided with what is known as a swing back for the purpose of bringing the plate into a perpendicular position when the camera may require to be tilted to include all the subject sought after, and thus obviate the chance of rendering the picture in a "toppling over" condition. It should also possess a rising and falling front and cross front; the former is an absolute necessity to enable the operator to move the lens up or down, so as to get rid of objectionable foreground, or upper portion of subject, as the case may be; the latter is essential only for carrying the flange of lens. The dark slides accompanying the camera should be double, and may either be solid or of book form—if the latter, preferably clamped at sides when closed—and the shutter ought to be hinged to enable it to be folded when drawn, and obviate its presenting a surface to the wind.

### THE LENS

usually supplied with a cheap outfit is that known as "Single Landscape," and for landscape work it is exceedingly effective, but for general usefulness nothing can equal a rapid rectilinear, which, as its name implies, is of a rapid type, and has the property of rendering straight lines correctly, in which the single lens fails. The focus of a rectilinear usually equals the diagonal of plate, includes an angle almost the same as the eye, and is therefore free from perspective distortion. Another advantage in possessing a lens such as this is, that either of the lenses of which it is composed may be used as a single lens of about double the focus of the combination.

### THE TRIPOD

should have more pretensions to solidity than the camera, and by all means see that a good sized tripod head is obtained. Some tripods are fearfully and wonderfully made. I would suggest one

folding at each joint, with some adequate means of clamping each fold in position, but without any sliding portions, as these latter are apt to get swollen with wet, and prove annoying.

### AN INSTANTANEOUS SHUTTER

is not a necessity, but as the novice will not likely be long ere he is anxious to try rapid work, I can with all confidence recommend the revolving disc shutters supplied by the popular makers of photographic outfits. Such a set as described can be purchased new for:—Quarter plate with single lens, £2 2s.; half plate with single lens, £4 4s. If rectilinear lens is substituted for single, add ten shillings to quarter and twenty to half plate, and for each dark slide in addition to one supplied with outfit, seven shillings and sixpence for quarter, and twelve shillings and sixpence for half plate. In fairness to the many makers, I refrain from publicly mentioning any particular one from whom to purchase. A good sized focussing cloth is indispensable, and it along with sufficient material to make bags for dark slides to protect them from light and damage may be purchased for 2s. 6d. while a good, stout, leather-bound canvas case may be purchased for 7s. 6d. quarter and 10s. 6d. half plate size. Having obtained an outfit, invest in the "Beginner's Guide to Photography," price 6d., in which will be found concise directions for the taking and developing of and printing from the negative, together with a capital article on exposure, "the stumbling-block in the way of all who handle a camera for the first time."—*The People's Journal*.

## Exhibitions.

### LIVERPOOL INTERNATIONAL PHOTOGRAPHIES.

No. V.

(By our Special Correspondent.)

AFTER a run extending something over five weeks the Liverpool International Photographic Exhibition is to close on Saturday of this week. During the run the show will have been open on thirty-one days, and up to date the attendance is given as 48,500; the full record will probably reach 51,000 or 52,000, an average of about 1,600 persons a day. The amount of money taken at the turnstiles substantially exceeds the amount taken at the previous exhibition in 1888. The expenditure has also been on an extensive scale, the executive having been both generous and enterprising in all departments. There will, however, be a handsome profit. Some little agitation was started in the local press a few days ago to induce the executive to reduce the charge of admission from 1s. to 6d. during the last week, but these gentlemen decided that the change in price was neither called for nor desirable. A more enjoyable and instructive resort than the big show has perhaps never been before offered to the Liverpool public, and they have availed themselves of the function to the full. It has been arranged that the show will really wind up with a ladies' social conversazione and dance next Thursday, the venue chosen for this interesting item being the City Hall, Eberle-street. Previous to the festivities the medals awarded to successful competitors in the exhibition will be distributed. A large attendance and a successful gathering is already practically assured. By the way, in company with Mr. Gambier Bolton, his grace the Duke of Newcastle has attended the exhibition and announced himself delighted in the extreme, not only with the pictures but with his reception.

### FINAL LIME-LIGHT ARRANGEMENTS.

Twelve fine demonstrations were arranged for the last week, one of the most novel, from several points of view, being the AMATEUR PHOTOGRAPHER idea of lantern slides, with portraits of the workers, being practically worked out on Thursday, when a number of slides by members of the Liverpool Association were shown to a large and appreciative audience. Another admirable set of views consisted of scenes, &c., in Ireland, got together by the Ulster Amateur Photographic Association, assisted by Dr. Cecil Shaw and Mr. James Stelfox. This collection is a very exhaustive series, quite out of the way of the beaten path, and differing entirely from the usual commercial slides. The Ulster Society are about inaugurating, at the instigation of Mr. T. S. Mayne, who showed the slides, a photographic survey of Ulster on the lines of the Birkenhead Society's Hundred of Wirral



Survey. The set will subsequently be sent the round of the Societies of Great Britain and Ireland.

Other lime-light shows of the week are Mr. Paul Lange's "Iceland" and "Norway," Mr. Lamond Howie's "Ober-Ammergau," Mr. Fred Clibborn's "Italy," Mr. E. M. Tunstall's "At Home and Abroad," Mr. Timmins' "Ship Canal," Mr. John Hargrave's "Hundred of Wirral," and Mr. George Thompson's "Eiffel Country."

#### PICTURES (CONTINUED).

In Class XXVa—841 to 9392b; general section; sundry exhibits for competition—there is some very excellent work. Three silver medal winners in the class are H. McMichael, 859 to 866; W. J. Byrne, 925 to 928; and A. Vandyke, 934 to 938. These three workers contribute very excellent studies, Mr. McMichael's work, two scenes from "Twelfth Night" and six pictures from "Enoch Arden," being exceptionally fine. The Manchester Society Challenge Competition, 841 to 858, shows some capital efforts, among the exhibitors being J. W. Wade, J. Davenport, T. Glazebrook, Miss Twist, &c. S. Bourne, in 868 to 871, has a very good quartet indeed—four studies of Killarney. Fred Hollyer, 890 to 899, reproductions of paintings by E. Burne Jones, Rossetti, Watts, R.A., etc., show up conspicuously, a very fine effort among the set being 899, a portrait of E. Burne Jones by Watts. No. 900, two cases of cabinet portraits (silver) by John Collyer, call for special notice, as do several of Richard Keene's 910 to 922. No. 923, a set of ten portraits of Professor Herkomer as "Filippo," by R. Downer, are splendidly done and quite a feature of the class. Maurice Bacquet exhibits in 924 admirable instantaneous portraits and landscapes, and then W. J. Byrne is again prominent with 925 to 928, Nos. 927 and 928 being perhaps the more meritorious. Harold Baker has nice portraits in 929 to 931.

Class XXVI.—940 to 958; President's prize; silver medal for ladies' work; any size, subject, or process; set of four pictures—though comparatively small is a good one, and boasts work of more than average merit. Miss Lil W. Tomkinson is awarded the trophy for a very well chosen and well executed set, 955 to 958, which include three landscapes, and the "Banqueting Room" of Haddon Hall. Mrs. Jeannie Welford shows capital work in 941, Mrs. C. M. F. Brockholes in 944 (frost scenes), Mrs. Janie W. Hignett in 946, and Mrs. S. Francis Clarke in 949. Other exhibitors in this class are Miss B. H. Langton, 940 and 950; Miss E. Haddock, 942; Miss Constance L. Salt, 943; Miss Rose F. J. Collier, 945; Mrs. Edith B. Wilson, 947; Mrs. Addie Dresser, 948; and Miss J. B. Kearsley, 951 to 954. Mrs. Janie W. Hignett, and Mrs. S. Francis Clarke receive bronze medals.

Class XXVII.—959 to 968, President's prize; bronze medal for beginners, youths under twenty, any size, subject, or process; set of four pictures—attracted ten aspirants, of whom Vincent Fothergill, 966, landscapes, was successful. J. B. Adamson shows creditable work in 960; C. M. Wane, 959; A. A. Chancellor, jun., 961; Arthur B. Swifte, 962; Philip Joseph Lehmann, 963; Theodore Rathbone Hubback, 964; George Massey Noakes, 965; Lumley Cator, 967; and A. L. Spilles, 968, are the other competitors. Altogether the studies in this class are very fair.

The class of the exhibition, "Champion Pictures," is, of course, excellent. The numbers range from 969 to 1,019 inclusive, the studies occupying one of the best positions in the galleries. Richard Keene exhibits thirty-three platinotypes, 970 to 975, all of which are well up to the mark and worthy their place. Lyd. Sawyer, with 976 to 983, shows several well-known medal pictures, all high class. Then comes Marshall Wane's 984 to 985; architectural interiors, landscapes, etc., by A. Schmitz, 986; superb cloud effects, 988, by J. L. Mackrell; 989, by W. J. Byrne; R. H. Lord's 997 to 999; W. Winter's 1,001 to 1,003 (portraits); Arthur R. Dresser's "Corbiere Rocks," 1,006; F. M. Sutcliffe's "Excitement," 1,005; G. West and Son's "Yacht Racing at Southampton," 1,007; Shapoor N. Bhedwar's "Feast of Roses," 1,009 (gold medal); C. Court Cole's 1,011 to 1,013; William Parry's 1,015 to 1,016; J. B. B. Wellington's 1,017 and 1,018 (gold medal), and Mr. J. P. Gibson's 1,019. The pose and printing of Mr. Bhedwar are surprisingly good and correct; and Mr. Wellington's 1,018, "Eventide," on matt surface is a model of mellowness and evidences the true artistic temperament of this widely known worker. Nearly every picture in the champion class is worthy of special mention. F. M. Sutcliffe's "Excitement" is unusually excellent, as is Mr. Court Cole's "Evening on the River," 1,012. The same worker's "The Evening Cloud," 1,011, though hard to beat, would be much better if the sky were improved a shade.

Among the "Not for Competition" pictures there are also many studies of note. Ralph W. Robinson's series of sixty-three "Artists at Home" are, of course, well known. They are a big feature—one of the biggest—in the show. The "Not for Competition" class extends from 1,021 to 1,100, and is largely hung in the Champion Class department. Louis Meldon's 1,022, "Pace Making," taken in 1/50 of a second, Paget plates, Ross 9 1/2 inch lens, is exceedingly clever, and has attracted a lot of attention. David Hedges and Sons are prominent with 1,025, of 1,025 and 1,026, "Enlargement of a Bull." Lyd. Sawyer is again represented with 1,030 to 1,032, and F. M. Sutcliffe also comes in again with 1,027 and 1,028, and 1,035 and 1,036. The two latter are the best frames, 1,036 being better than 1,035. H. P. Robinson shows a fine lot in 1,039 to 1,050—1,039, "A Strange Fish;" 1,040, "Against the Wind—A Race with Grand-dad;" 1,043, "What Sport?" being perhaps the pick. Paul Lange is represented with his magnificent Frost Studies, 1,052 to 1,054, and his no less beautiful studies, "Views in Norway," 1,055. No. 1,061, "Professor Blackie," by John Collier, is a lovely large portrait, and Harry Tolley's 1,063, "Bantry Bay," is another rich picture. In 1,071 Barraud's exhibit some fine portraiture, a picture of Stavenhagen being most admired. J. Gale's 1,079 to 1,083 are a superb quintet, Nos. 1,079, "House by the Stepping Stones," and 1,081, "Homewards from Plough," being perfection. G. Watmough Webster shows 1,085 and 1,086, the last picture, "Where's Mother?" being admirable in every detail. Of J. Pattison Gibson's display, 1,087 to 1,098, which are all alike excellent, it would be invidious to single any one study out for particular mention. Wm. Tomkinson, 1,100, shows an able panoramic view—"Bantry Bay."

In the Miscellaneous Section, Mr. John Noakes, a member of the Liverpool Amateur Association, shows an exhaustive series of views of transatlantic cattle ships, taken for the Liverpool Steamship Owners' Association. The ships are finely shown, sections, internal fittings, appointments, etc., included. J. L. Hawliezek exhibits, in 1,101a, "Views of Bosnia and Herzegovina, 1890," presented by the Governor of the provinces to him after his visit to that country. The proprietors of the *Daily Graphic* also show a series of blocks, etc., to illustrate the first inception of a sketch or photo to final newspaper print.

#### APPARATUS (CONTINUED).

One of the largest "trade exhibitors" in the exhibition is the firm of Messrs. Archer and Sons, Lord Street, Liverpool. They show chiefly the latest novelties in lanterns and lantern fittings, but they have also a comprehensive show of photographic materials in general and cameras. Their Excelsior lantern, Photinus, Miniature, Pentaphane, Metamorphoser, Ideal, Popular, New Scientific, enlarging and optical lanterns, and others, have drawn much attention, as have their Biunials, New Triple-rack, Exhibition, Triunials, etc. They also exhibit lantern microscopes, Lecturer's lanterns, New Single lantern, Terpuoscope lantern, and a host of other apparatus, a description of which would prove far too lengthy for the space at disposal. Most of these are the latest in the market, and all are exquisitely finished. A really profitable two hours may be comfortably spent at Archer's stall.

The Fry Manufacturing Company show very excellent enlargements on Fry's Naturalistic paper, and enlargements on opal.

Messrs. Robinson and Thompson show panel, cabinet, carbon, and other portraits, and platinotype interiors, Almirante Lynch, carbon opals, etc.

A. and G. Taylor's bromide opals, Royal and ducal personages, are much admired.

Medrington's, Hannan and McIlween, Hauser and Menet (Madrid), William Hume, Alfred Watkins, James Wood, the Birmingham Photographic Company, and other firms show interesting novelties.

Mr. T. Miller's Stereoscopic camera and Adelphi hand-camera occasion much comment, the Adelphi in particular being a favourite.

Mr. James Wood's Washer (improved) is likely to be very popular. It is claimed for it—rapid elimination of hypo (plates in fifteen minutes, prints thirty minutes), platinotype prints freed from acid in five minutes, etc. Adjustable for all sizes of plates.

I will conclude my notes of the show next week, when I hope to be able to give exact figures of the attendance, receipts, etc., with a concise review of the proceedings.



## Camera Club Conference.

THE fifth annual Conference of the Camera Club was opened at the Society of Arts on Tuesday, under the presidency of Captain Abney, and there was a good attendance. The President's speech was short, but interesting, as he dealt with two subjects of great importance to photographers of all parts of the globe. The first was the question of the desirability of establishing a uniform standard of sizes for plates, on which point he was decidedly of opinion that such a system should be set up, and expressed the opinion that the English half-plate ( $6\frac{1}{2}$  by  $4\frac{1}{2}$ ) should be the unit, that size being practically equivalent to the French 26 by 18 centimetres; all other sizes should be multiples of that figure. The next point was that of standard weights and measures, and while he was of opinion that the decimal system would not be accepted by England, he thought that a compromise might be arrived at by accepting the grain as the unit of weight, and the drachm as the unit of volume. Referring to M. Lippmann, whom he had recently seen in Paris, Captain Abney said that the plates shown him did really show the colours of the spectrum by reflected light, but not by transmitted light, and as his idea of photography in natural colours was the production of a pigment which would register the various colours thrown on the plate, he felt that photography in natural colours was as far off as before M. Lippmann's discovery. A short discussion took place on the question of the weights, measures, and plates, and the general feeling seemed to be that it was desirable that there should be a universal standard for all of them. Mr. Warnerke also advocating a universal standard for measuring the rapidity of lenses.

Mr. Lyonel Clark then read a paper on "The Use of Uncorrected Lenses," those with which he dealt being common spectacle lenses, which he said were effective when softness, as opposed to absolute sharpness, was desired.

Mr. Debenham explained that there seemed to be amongst photographers a misconception with regard to the word sharpness. By that term artists meant hard cutting lines, while photographers meant well defined. His view was that they should get photographs as sharp as the lens would let them.

Mr. Dallmeyer said that what could be done with single lenses was wonderful, and the desire of opticians was to do away, so far as possible, with the difficulties inherent in them.

Mr. Traill Taylor showed two or three lenses consisting of simple lenses of very ancient date.

Major Nott, in the absence of Mr. Joseph Pennell, read that gentleman's paper on "Photography as a Hindrance and a Help to Art." The title of the paper was somewhat of a misnomer, at any rate so far as its second portion was concerned, for it consisted of a vigorous attack on photography, in the course of which it showed that "the so-called art photography endeavoured to produce by machinery what the true art-worker produces by skilled handicraft . . . Photography never does and never can make selection . . . I believe it is a canon of faith with photographers that they have made artists more accurate, that in many ways they have brought them down to date. I do not admit this for a moment . . . I am not aware that artists owe any more to Mr. Muybridge—I mean always the greatest artists—than the conclusive substantiation which he has given to facts which were known to artists themselves from the earliest times . . . Mere outline, which is all that photographers can at times give directly, is but one feature of any object in nature. Truth of light and shade, colour and tone, no photographer ever has recorded, or, I believe, ever will record. . . . But it may be asked, then, of what use is photography to artists; and why do nearly all of us use it? Because it is to many, as to you, a most interesting and fascinating study apart from our work." It concluded by saying, "But although I have no doubt that photography will aid artists in an infinitude of ways now undreamt of, so long as there is any love of art it will never supersede it or become in any way its serious rival. Not that I question in any way the ultimate popular principle of photography. With the general public the greatness of the photographer is as assured as that of Mr. Henry Arthur Jones or Mr. Rider Haggard; and eventually the artist may be told by the people he has educated that he must go. From the saving remnant, however, he has nothing to fear."

Mr. Maskell took up the cudgels in defence of photography, and said that Mr. Pennell appeared to be ignorant of the

advances photography, artistically considered, had made in the last few years. Let him not mix up the professional photographers and the dilettanti amateurs with those who strove to produce works of individuality and originality. The work of Professor Muybridge did not claim to be art. It was not true that no true rendering of light and shade could be got by photography. The artistic photographer was moderate in the estimate of his art, and did not claim to rival the great painters and etchers, but he did claim some at least of that individuality which entitled him to some place, if a small one, in the wide field dignified by the name of art.

Mr. H. P. Robinson stated that the paper should not be dealt with seriously, and should have been received in solemn silence.

Mr. Debenham said as a matter of fact it would be found that since the advent of photographs of animals in motion there had been a great change in the manner in which artists drew them. Those photographs had taught the people the truth, and they were no longer satisfied with the conventional rendering of horses in motion. This was specially shown in the difference between the illustrated papers of fifty years ago and of to-day.

Mr. King said he had been in the photographic business for forty-five years, and he had supplied many artists with photographs. A very expensive book about Westminster Abbey had just been published, and the whole of the etchings had been done in facsimile from photographs without any alteration.

Mr. G. Davison said Mr. Linley Sambourne, a great black and white artist, had written to him to the effect that he had always used photographs and was always ready to confess it. The paper was full of unsupported assertions, some of which showed that Mr. Pennell was totally innocent—that was a better word than ignorant—of photography, which was the real cause of his making the statements he had done. The writer tried to establish a distinction between photography applied to art and monochrome drawing applied to art. The difference was really only one of degree. They might admit the difference in degree in the power of emphasis and expression, but certainly not that the latter were wholly absent in photography. The most extraordinary assertion in the paper was that which claimed that detail was better given by the draughtsman, and more faithfully rendered than by photography. He would ask Mr. Pennell to go and examine the transparencies by Mr. Stevens on view at the Club, in which the detail seemed to him far beyond what had ever been or ever was likely to be done with pencil or brush. The writer spoke of the camera as "a machine with no sense or feeling, a machine which does not even receive the impression of objects in the same proportions as you do." That showed the writer's utter ignorance of the use of photographic appliances.

Major Nott desired to say a few words so that he might not be taken as identifying himself with the paper which he had read. The paper showed that the writer knew nothing about his own art. If he knew anything about the modern French school he would know that it owed its charms to the fact that the artists had recognised the fact that photographers had influenced public opinion, and people would have exactness and correctness, and so the artists had to supply the article.

Mr. Humphrey said Mr. Pennell had been asked to come and bless them, and he had altogether cursed them. Photographers, as a rule, had a fair estimate of their own merit, and would stand a great deal of abuse, but a little correction occasionally was good for them, as it would help them to a greater excellence in their work. When they looked at the work of an educated artist like Mr. Burchett, they got some idea of what photography would do in the hands of a true artist.

Mr. V. Blanchard pointed out that in the earlier works on cathedrals nine-tenths of the plates were utterly false and offensive, while in the latter publications of Cassell and Co. the correcting effect of photography was to be seen.

Mr. Welford said that in Mr. Pennell's earlier writings he spoke very differently of photography.

The Chairman was rather sorry that the paper would be printed in the Journal of the Club, as it might lead to a false impression. With respect to a question of pen and picture, he always understood that perspective was perspective, and could be nothing else, even if a wide-angle lens were used. Professor Muybridge's photographs had taught artists a great deal, and he was glad that there were many artists ready to admit the fact. It was well for them to show that they were not completely crushed to



the wall, and that there was something to be said on their side.

The paper on "A Note on the Physiological Aspects of Some Problems in Art," by the Rev. F. C. Lambert, M.A., was taken as read, and the Conference adjourned.

## Quarterly Examinations in Photography.

**Question 31.**—Describe in detail the process for stripping the film from a negative.

**ANSWER.**—The negative should first be hardened by immersing in a solution of chrome alum for about fifteen minutes, washed and dried. It is then given a thick coating of enamel collodion, which when set is washed until all signs of greasiness disappear. The collodionised negative is next immersed in a solution of hydrofluoric acid (1 to 10), and the dish containing it gently rocked until the corners of the film lift and the film blisters, when it is floated off the plate into a dish of clean water. A plate is prepared by polishing with French chalk and coating with collodion, which when set is immersed in water until all greasiness has disappeared. This plate is then slid under the film, which is arranged in place on it, and both removed together from the water, covered with a piece of tracing cloth, and squeegeed to ensure perfect contact between the two. The tracing cloth is then removed and the film allowed to dry. When dry, a knife is inserted under the film round the edges, and it can then be stripped off. Instead of squeegeeing on to a film of collodion, the stripped negative may be simply washed and allowed to dry.

WORFIELD.

**Question 32.**—What do you consider the best method of packing plates or negatives for transmission by post?

**ANSWER.**—The plates should be packed in pairs, film to film, with a strip of paper one-eighth inch wide between them at the edge; undeveloped plates should not have anything in the centre, as pressure will cause reduction of silver; but negatives travel better with paper the full size. The plates should then be wrapped in some non-actinic or opaque paper which contains nothing that will give off fumes or that will fog the plates; then a layer of waterproof paper should be put on to prevent damp or gas fumes spoiling the plates; if they are to go a sea voyage they had better be wrapped in tin-foil. If the plates are large, a piece of wood should be placed at the top and bottom of each package, but for small plates ribbed paper packing is sufficient.

**Question 33.**—Describe the production of a Woodburytype print.

**ANSWER.**—Collodionised plate-glass is coated with—

Gelatine	...	...	...	...	...	3½ oz.
Sugar	...	...	...	...	...	1 "
Glycerine	...	...	...	...	...	100 gr.
Carbolic acid	...	...	...	...	...	2 min.
Indian ink	...	...	...	...	...	2 gr.
Ammonia .888	...	...	...	...	...	60 min.
Ammonia bichromate	...	...	...	...	...	300 gr.
Water	...	...	...	...	...	12 oz.

Allow 5 oz. of solution for each square foot. Dry very quickly in a calcium box; the temperature must be kept below 85 degs. F. When dry the film is to be stripped from the plate. The film is now exposed behind a reversed negative, the exposure being somewhat longer than for an ordinary carbon print. The film is carefully put on to glass which has been coated with a 5 gr. solution of rubber in benzole. A roller squeegee is useful here for getting rid of air-bells. The glass bearing the film is placed in a grooved box in water at 105 degs. F. When the water flows off without a yellow colour the temperature may be increased to 160 degs. F. The development takes some hours to complete. When developed, soak in a 4 per cent. solution of chrome alum for a few minutes, wash, and then put in spirit for an hour, dry, and then strip from the plate. Place the film on a lead plate, and expose to a pressure of 4 tons per square inch. To print, the lead plate is put in a press and a pool of ink (1 gelatine, 5 water, colour q. s.) is poured on in a melted state, a piece of water-proof paper is placed on the pool of ink, and the top of the press brought down; when the ink has set, the paper is taken off the mould with the picture adhering; wash in a solution of alum, then in water, and dry. The print must have the margins cut off, and may be varnished or rolled.

C.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Barrow in Furness (Photographic Section) Field Naturalist Club.**—The annual meeting was held on the 2nd inst. The annual report was submitted for approval and adopted. The following officers were elected:—Mr. A. Blechy, President; Mr. W. Dunlop and Mr. R. Spencer, Vice-Presidents; Mr. J. Redhead, Secretary. Mr. F. W. Walton showed the method of producing lantern slides by the wet collodion process, several plates being coated, exposed, and developed at the meeting.

**Bedford.**—At the annual general meeting held on the 3rd inst., the President (Dr. Beaman) in the chair, the report and balance-sheet were adopted and the rules were amended, the subscription being reduced to five shillings per annum for ordinary members, and one shilling per term for boys attending the various schools in the town. The officers for the ensuing year were elected as follows: President, Deputy-Surgeon-General A. H. Beaman. Committee: Messrs. W. O. Kirby, H. W. Stewardson, and C. E. Wareing. Treasurers and Secretaries: Mr. A. Kirby, junr., 8, Harpur Place, and Mr. C. Perrott-Smith, 57, The Grove, Bedford. It was resolved to hold the meetings for the future monthly. On the completion of business those present examined the prints sent in for the AMATEUR PHOTOGRAPHER Monthly Competition, No. 18, Inland Scenery. They were very much admired. The names of six new members were proposed, and altogether a very successful evening was spent.

**Birmingham.**—The ordinary meeting was held on the 2nd inst., Mr. E. W. Jones in the chair. The Secretary reported that on March 11th a very successful entertainment was given by Mr. E. H. Jaques at the Temperance Hall on "Through Ryfylke to Hardanger, Norway," illustrated by 160 lantern slides. Mr. A. J. Leeson exhibited and explained Marion's "Radial" hand-camera, which has several novel points. One of the principal is the way the plates are stored in radiating grooves ready for exposure. He also exhibited Thornton Pickard's new instantaneous shutter, which, with a small aperture and working between the lens, gave an exposure of  $\frac{2}{25}$  second; also Messrs. E. and T. Underwood's new instantaneous blind shutters with  $\frac{1}{2}$  inch and  $\frac{2}{3}$  inch apertures, the fastest speed registering  $\frac{1}{16}$  second by shutter chronograph. The Chairman then called on Mr. E. C. Middleton for his demonstration of "Carbon Printing." The Secretary announced that Mr. J. Howson, of the Ilford Co., had consented to show the working of their Alpha and bromide papers on the 9th inst.

**Bristol.**—On the 2nd inst. one of the most successful and pleasant meetings of the session was held. Mr. Bryant presided over a good attendance. The President of the Society, Mr. Harvey Barton, gave a most interesting demonstration on "Flash-Light Portraiture," which was listened to with marked attention by the members. Mr. Barton, who was frequently applauded, after a few remarks on the introduction of magnesium in connection with photography, exhibited several forms of flash-light lamps, and afterwards, with the kind assistance of some young ladies, who had accompanied him for that purpose, proceeded to make several exposures by means of a series of lamps of his own construction, erected on moveable wooden arms, and which were capable, through the medium of a foot-bellows, of giving eight simultaneous flashes. The plates were subsequently developed, pyro potash being used. The various stages of development were closely watched by the members, and numerous questions were asked. A very artistic and successful set of flash-light portraits were exhibited in the room, which, Mr. Barton explained, were his first efforts in that direction. They were very much admired by all present.

**Cornish.**—Mr. H. Tonkin, Hon. Sec., will read a paper on "Enlargements" on the 14th inst.

**Croydon.**—Owing to an error in the counting last week, the second prize at the exhibition was announced as being awarded to the wrong picture. The following is the amended prize list:—Class A: silver medal, Mr. G. Carden; highly commended, Mr. Elliot; commended, Mr. Blow. Class B: silver medal, Mr. A. E. Isaac. Class C: silver medal, Mr. H. Maclean; bronze medal, Mr. A. J. Sargeant; certificates, Mr. G. H. Elliot and Mr. C. E. Whittaker. Class D: prize winners, Mr. C. F. Oakley; highly commended, Mr. A. W. Hirst.

**Croydon Micro.**—An ordinary meeting was held on the 3rd inst., Mr. Edward Lovett (President) in the chair, when Mr. A. R. Dresser gave a paper entitled "The After Part of the Hand-Camera Negative," illustrated. Mr. Dresser in his remarks gave a brief outline of the method he adopted for developing hand-camera negatives, but entered largely into the intricacies of solar enlarging, and making slides. He also explained and illustrated a simple arrangement for

"Dreaming of the Dreams of Long Ago" is the title of a full-page illustration in the April number of *Old Jonathan*, which has been reproduced from a photograph taken by Mr. Ernest R. Shipton.



enlarging or copying a negative that had been taken askew; the carrier holding the plate to be copied rotating within a turntable. A large number of fine enlargements made from quarter-plate negatives were exhibited, and a good number of slides were passed through the lantern, and were well appreciated by the members.

**Elizabethan.**—On the 2nd inst. the members and their friends spent a very pleasant evening together in the hall of the Boys' Grammar School, Barnet, when Mr. Louis Medland, whose skill in photographing animals is well known, exhibited some 250 slides of animals and birds, to an audience of rather more than 250 people. The exhibitor briefly described the peculiarities and habits of the animals, as the pictures were thrown on the screen. As examples of so-called "instantaneous" photography, pictures were shown of horses in the act of taking a water-jump, a feat more satisfactory to the camerist than the rider. Of the animals in the Zoo the pictures most appreciated were—the lions, the bear on pole, zebra, antelopes, kangaroo with young, pelican, bearded vulture, and "Sally;" many of the pictures, owing to the extraordinary attitudes in which the photographer had been fortunate enough to catch the creatures, provoked much laughter, but one and all of Mr. Medland's own 240 slides excited great admiration. A number of slides painted some thirty years ago were shown, and also some made from Egyptian monumental figures; the sculptors of the Land of the Pharaohs could evidently represent animals far better than the artist (?) of thirty years ago. It is to be hoped that these painted slides will not fall into the hands of some future evolutionist, or his theories will have to be considerably modified to account for such *luses naturee*. Not the least interesting feature of the exhibition was a collection of reproductions of extinct animals, presumably taken from the casts at the Crystal Palace. The lantern was provided and very ably manipulated by Mr. Lambert Matthews. It was announced that a series of *outings* would be arranged for the summer months.

**Faversham.**—The monthly meeting of this Society was held on the 24th ult., Dr. C. J. Evers (Vice-President) in the chair. A very interesting collection of lantern slides was arranged on view in the slide stand, consisting of all the sets of slides sent in for Dr. Evers' Lantern Slide Competition, together with a number of Alpha slides, printed and toned by the Doctor himself, and exhibited as illustrations of the "practical demonstration" he had promised to give. The Hon. Secretary announced that the following members had competed for Dr. Evers' prize, viz.: Capt. Hooper, Messrs. W. C. Stunt, H. Dan, C. Cremer, R. Woodruff, and F. Crosoer; and a letter from the doctor was read, expressing his gratification at the excellence of the competition, and announcing the result as follows: Prize to "Alert," Mr. H. Dan. Highly commended, "Voyageur," Mr. F. Crosoer. Commended, "Vrill," Mr. W. C. Stunt. Dr. Evers then presented his prize, consisting of a volume, the "Dictionary of Photography," by E. J. Wall. The Hon. Secretary said that he had been entrusted by the Editor of the AMATEUR PHOTOGRAPHER with the pleasing duty of presenting to Mr. W. C. Stunt the Bronze Medal for the best print taken at the Society's summer excursions. At the request of the Chairman, Mr. Stunt consented that the medal (which was very handsome and much admired) should be on view at the Society's first annual exhibition, in April. In fulfilment of his promise, Mr. C. Cremer, assisted by Mr. F. C. Jackman, exhibited—by the aid of his excellent Pamphengos lanterns—the competitive lantern slides, together with the examples of Alpha plates, lent by the Chairman. Dr. Evers then proceeded to give his promised "Demonstration on Printing and Toning Alpha Lantern Plates," minutely explaining every detail of the process, in a thoroughly practical manner. Four plates were printed from the same negative but of different periods of exposure, in order to produce different tones of colour. Hydroquinone was the developer used, whilst the combined toning and fixing bath was as follows: Acetate of soda 30 gr.; sulphonycyanide of ammonia, 50 gr.; hyposulphite of water, 1 oz.; water 4 oz. When all dissolved, add chloride of gold 3 gr. The doctor explained that this solution can be used till exhausted, will suffice to tone from two to three dozen plates, and will keep good for a month or two. A hearty vote of thanks was accorded to Dr. Evers for his able demonstration, and Mr. Percy Dan kindly undertook to give a demonstration on "Intensifying and Reducing," at the next meeting, on 21st April.

**Haltwhistle.**—The monthly meeting was held on the 28th ult., Dr. Speirs (Vice-President) in the chair. The evening being devoted to a lantern exhibition, the attendance of members and their friends was large. The next meeting will be held on Monday, the 13th April, when a demonstration on "Lantern-slide Making" will be given by the Secretary.

**Holborn.**—The third annual general meeting was held on the 3rd inst., Mr. T. O. Dear (Vice-President) presiding; over thirty members being present. Before receiving the reports of the Treasurer and Committee, Messrs. G. Luxton and F. Henderson were elected members of the Club, and the Secretary read a letter from the London County Council granting permission for the members of the Club to photograph in Waterlow Park on the 11th inst. The Treasurer then

read a statement of the income and expenditure of the Club for the year ending March 31st, 1891, showing a net balance in favour of the Club of £18 2s. 3½d. The Secretary read the report of the Committee, which showed that during the past year nineteen members had been elected, while eight had resigned. With regard to lectures, they had been very successful, while the various lantern entertainments during the year had proved very attractive. During the summer months the club had made excursions in the neighbourhood of Carshalton, Epping Forest, Greenwich, Highgate, Kew Gardens, Laindon Hills, St. Albans, the Temple, and Wanstead Park, all of which were well attended. Thirty-eight members and friends sat down at the annual supper in November, while 69 were present at the annual exhibition and cinderella in March. On the whole, it was considered that the club had made very satisfactory progress during the past twelve months. The reports having been adopted, the question of raising the subscription was considered. After a long discussion it was decided to raise the subscription to 7s. 6d. Another addition having been made, it was resolved that Rule II. of the club should read as follows: "(2) The annual subscription shall be, for gentlemen 7s. 6d., with entrance fee of 5s.; for ladies 2s. 6d., without entrance fee. All subscriptions and entrance fees shall be paid in advance. Any member who shall have omitted to pay his or her annual fees by the following first of July shall, after having received two applications at one month's interval from the Secretary, cease to be a member of the club, except in special cases to be decided by the Committee." The following officers were then elected: President, Mr. T. C. Hepworth, F.C.S.; Vice-President, Mr. Fred Brocas, Mr. S. T. Chang, Mr. T. O. Dear, and Mr. R. B. Lowe; Hon. Secretary, Mr. J. E. Smith; Assistant Hon. Secretary, Mr. Herbert Thompson; Treasurer, Mr. Albert Pell; Librarian, Mr. H. C. Gay; Committee, Messrs. E. H. Bayston, E. Benest, F. J. Cobb, A. J. Golding, Alfred Hodges, F. Knights, and R. Luxton. Ten members attended the club outing to Richmond and Kingston on Easter Monday, and an enjoyable day was spent in this beautiful neighbourhood.

**Ireland.**—An informal meeting was held on the 3rd inst. A highly instructive and interesting paper was given by Mr. J. H. Hargrave, B.A., Hon. Sec., on the "Optical Properties of Shutters." Mr. Hargrave demonstrated by means of the blackboard, and also by lantern-slide diagrams, the advantages, or disadvantages, of using the instantaneous shutters in every-day use amongst photographers in various positions, viz., (1) in front of the lens, (2) between the combinations of a doublet lens, (3) behind the lens, (4) in front of the plate; and stated that a blind-roller shutter working in the latter position possessed the highest efficiency, as it did not interfere with the rays of light passing through the lens.

**Isle of Thanet.**—A meeting was held on the 1st inst., Mr. Walter Saunders (Vice-President) in the chair. Professor Tweedie gave a practical demonstration entitled "Hints on Lantern-Slide Making," and said he used by preference Alpha plates developed with hydroquinone. Having exposed some plates, he proceeded to develop them in tanks or cells in the oxyhydrogen lantern, the light being passed through ruby and orange screens, which were removed as development proceeded. The process was very clearly shown and most ably explained, and was followed by those present with much interest. After washing, which the lecturer reminded the junior members should be thorough, he proceeded in the same manner to show the processes of fixing, reducing, and toning, that of reducing or clearing being very satisfactorily shown by some slides purposely veiled. Several useful formulæ were given.

**Leeds.**—On Thursday the 2nd inst., Professor E. H. Jacob, M.A., M.D., read a paper on "Winter Photography." Dr. Jacob said that photography in the winter was far too much neglected by amateurs. He dwelt on the greater truth to nature of winter photographs, the values of the almost monochrome pictures being more correct than views which contained a profusion of colours, mostly green, while from an artistic point of view there were a large number of spring and winter views of great beauty. As subjects for pictures, he instanced (1) Buildings, the greater part of which is frequently in summer obscured by trees or foliage, and interiors in the same way are often shaded by trees. (2) Snow scenes, or pictures taken during a hoar frost, which formed some of the most beautiful subjects for the camera. (3) Trees. Here the photographer had a great advantage over the artist with the brush, for the winter trees could be rendered with absolute accuracy. He thought people were unaware of the great beauty of most trees without leaves, especially the birch, the elm, and the oak, besides the artistic value; a collection of good photographs of leafless trees would be most useful from a botanical point of view, and should find a place in the collection of every school of botany. Some of the most beautiful trees he had seen were to be found in Nuneham Park, near Oxford, and in Studley Park. (4) General winter landscapes, where interest was given mostly by the conformation of the land, hills, buildings, or by contrast of bare trees with evergreens. Seaside views were better in winter than in summer, as the waves and skies were more varied. Dr. Jacob illustrated his paper throughout



by a series of lantern slides of winter scenery, including a number of fine forest trees from the parks referred to above. Mr. J. W. Addyman, B.A., brought before the members an account of the recent investigations of Col. J. Waterhouse, S.C., Assistant Surveyor-General of India, respecting electro-chemical reversals with thiocarbamides, in which the members were much interested.

**Lewisham.**—The annual general meeting was held on the 3rd inst., and the following gentlemen were elected officers for the ensuing year: President, Rev. J. Morley Wright. Vice-President, Mr. Alfred H. Miles. Committee: Messrs. E. Eastwood, R. W. James, M.I.C.E., M. Stodart, and Prof. Lambert, M.A. Hon. Secretary and Treasurer, Mr. B. Davidson, 62, Manor Road, Brockley, S.E.; and Assistant Hon. Secretary, Mr. H. M. C. Sprunt, 192, New Cross Road, S.E. Previous to the election, the meeting was made special for alteration of rules. The next meeting will take place on April 17th, when Mr. A. R. Dresser will give a lantern exhibition and demonstration.

**Morley and District.**—The last meeting of this session was held on the 24th ult., the President (Mr. S. Atkinson) in the chair. The formal business being disposed of, the President gave a lecture on the "Optical Lantern," illustrating his remarks with several diagrams and his own lantern.

**North Middlesex.**—On the 4th inst. a well-attended meeting of the members and friends of the Society was held to bid farewell to the President, Mr. J. Humphries, F.S.A., who is about to leave London for Glasgow, where he will in future reside. A smoking concert was organised, Mr. W. T. Goodhew, Vice-President, in the chair; and the following gentlemen gave songs, instrumental solos, and readings:—Messrs. Hiscock, Cherry, Harper, Hewson, Marshall, Mummery, Saville, Baker, Beale, Stuart, Pithes; and a friend of Mr. Cheney presided at the piano. The event of the evening was the presentation of an illuminated address, bearing the signatures of the members, to Mr. Humphries. In making the presentation, the Chairman said that the success which had always attended the Society had been to a very great extent due to the business abilities and amiability of Mr. Humphries. He had ever shown himself ready to support and advance the Society, regardless of the sacrifice of his own time and convenience, and in bidding him farewell the members felt that they were losing an officer whom they could not replace. Mr. W. H. Walker, Vice-President, in endorsing Mr. Goodhew's remarks, said that Mr. Humphries' amiability was the velvet glove that covered an iron hand ever ready to direct and firm to control. He thanked him in the name of the members for his valuable services, and wished him God-speed wherever he might be. Mr. Louis Medland, as a visitor and an old friend, joined in wishing Mr. Humphries success in his future career. The first photographic meeting he had attended was a lecture by Mr. Humphries. He had been impressed then with a respect for him which had deepened and strengthened ever since. Mr. Humphries, in reply, said that the work he had done for the Society had brought its reward in the kindly feelings it had generated. Although he could no longer attend the meetings, he would always remain a member, and cherish the warmest feelings of friendship for those with whom he had worked. The address, with its signatures, would be one of his most favoured possessions. It would be a source of constant pleasure to him, and would be, he felt, an "open sesame" to any photographic society he might wish to join. The North Middlesex would advance and prosper, for he knew the value of the officers who formed its council. The meeting continued to a late hour.

**Photographic Society.**—At the technical meeting held on the 24th ult., Mr. W. Bedford being in the chair, the Assistant Secretary read a letter from Mr. G. Houghton accompanying two works entitled "Excursions Daguerriennes," containing a large number of plates drawn from daguerreotypes taken prior to 1841, and an advertisement from "Fraser's Advertiser," dated 1840, relating to them. The subject for discussion was "Hand-Cameras." Mr. Chapman Jones showed and explained his quarter-plate hand-camera, and Messrs. Smith and Sons' Memorandum camera. Mr. Leon Warnerke brought three cameras for exhibition. The first was a camera made in Russia ten years ago; the second, a camera of French make, with a hemispherical front; and the third Stirn's hand-camera. Mr. T. F. Hoban exhibited Loman's Reflex camera, for which Messrs. Mawson and Swan are the English agents. Mr. Percy Hargreaves described Messrs. Houghton and Sons' Automatic camera. Mr. F. J. Moulton, on behalf of the Eastman Company, showed seven forms of Kodak cameras; the shutters attached to the larger sizes were much admired. Mr. J. Pettingall exhibited two forms of Messrs. Robinson and Sons' Luzo camera. He also laid before the meeting an enlargement from a negative taken with a larger sized camera. Mr. R. C. Murray explained Dines' hand-camera brought out by Messrs. J. J. Griffin and Sons. The Assistant Secretary showed on behalf of Messrs. Griffiths, their guinea and guinea and a half cameras. He also explained the Graphic camera of the London Stereoscopic Company. Mr. E. W. Parfitt described Hume and Parfitt's camera, made by Messrs. Humphries. Mr. E. A. Cade exhibited and described

Messrs. Marion and Company's Radial camera. Mr. J. A. Sinclair, on behalf of Messrs. Adams and Co., described their Ideal and Adams' cameras. Mr. C. Cusworth showed his very simple and ingenious Repeater camera. Mr. W. B. Parker described Messrs. Parker and Company's Companion camera. Mr. J. F. Shew showed two forms of his camera, and an ingenious method for focussing the lens. Mr. C. C. North exhibited a new camera he has devised. Mr. T. Samuels pointed out what he considered were the essentials of a hand-camera, and described two of his instruments, and explained their numerous adjustments. On the motion of the Chairman a hearty vote of thanks was passed to the above-named gentlemen for bringing cameras with them. Mr. Leon Warnerke then described some experiments he had been making upon colours produced by interference, and showed that the colours obtained when a negative, prepared by the powder process, mentioned in his collotype lecture, was collodionised was due to interference, produced by the reflection of light from the graphite. He also showed some coloured images on albumenised paper obtained by printing through a negative composed of strips of coloured glass on albumenised paper, the sensitised surface of which was in contact with mercury. The colours were strong and distinct and were visible both by reflected and transmitted light, but the colours disappeared on fixing. At the technical meeting on March 31st, Mr. Chapman Jones, F.I.C., being in the chair, the minutes of the previous meeting having been read and confirmed, Mr. T. E. Freshwater showed his miniature lantern. A lantern display then took place; slides were contributed by Messrs. S. T. Chang, H. M. Hastings, Mawson and Swan, E. W. Parfitt, H. Chapman Jones, H. R. Hume, S. Ashburner, W. England, and A. Mackie. Mr. T. E. Freshwater then exhibited some slides in his miniature lantern. The exhibition was greatly appreciated by the members and friends present.

**Richmond.**—The first field-day of the season took place on Easter Monday, when nine members visited Cobham and Ockham, and, in spite of the wintry weather, succeeded in getting some good negatives. The 3rd inst. was a lantern night. Mr. Faulkner presided. Mr. Ardaseer showed and explained the new pneumatic shutter of Adams' "Ideal" hand-camera, an ingenious and beautiful bit of mechanism. Mr. Cembrano again lent his lantern; and slides by the following members were shown:—Commander Tudor, Messrs. Ramsay, Hunter, Ardaseer, Richardson, Faulkner, Perry, Bickerton, Garrett, and Cembrano; as well as a very beautiful set of views at Windsor Castle by Mr. Brooks of Reigate.

**South London.**—The second annual meeting was held on the 3rd inst. At the last annual meeting the strength of the Society was sixty-three. During the past year there had been an influx of forty-four members, the present strength thus being 107. It was resolved to impose on all who enter after May 3rd an entrance fee of 2s. 6d., and to change the meeting night to the first and third Mondays in the month, such change to take effect on and after May 17th. The following election took place: President, F. W. Edwards. Vice-Presidents, M. Howell, Dr. Munyard, W. Rice, H. G. Banks. Committee: Messrs. Boxall, Farmer, Fellows, Fitness, Groves, Herbert, Kelly, Lyon, F. Webb. Hon. Treasurer, A. E. Whitby. Hon. Secretary, S. W. Gardner, 7, Barry Road, East Dulwich, S.E. The balance-sheet showed a balance in favour of the Society of £4, and the fixtures account to the value of £3.

**Southport Social.**—On the 25th ult. at 15, Cambridge Arcade, Mr. Cross gave a very instructive demonstration on "Intensification and Reduction." Several negatives made by members were treated, with very gratifying results. On the 1st inst. was the usual monthly "social," when various novelties of a most interesting nature were exhibited, and a very pleasant evening spent.

**Tunbridge Wells.**—The ordinary meeting was held on the 2nd inst., when there was a large muster of members, Mr. A. Marshall being in the chair. Mr. G. W. Cuming was duly elected a member. Dr. Prince was to have given his experiences of photography forty years ago, but, unfortunately, through indisposition he was unable to be present, his paper being postponed till the May meeting. Mr. Dresser sent over a hundred slides from pictures taken with his hand-camera, including wave studies, scenes in Brittany, animal studies, amongst which were "Zoo" pictures, and the climbing dog series, all of which were much admired. Mr. Pierson manipulated his lantern on the occasion, and also contributed a few of his own slides, as did also Mr. Cornell. The chairman brought prints and negatives which were handed round and criticised. Samples of Marion's Britannia plates and Mawson and Swan's pocket diaries were handed round.

**Wakefield.**—A general meeting was held on the 3rd inst., Captain Norwood in the chair, when A. W. Stanfield, Esq., J.P., was unanimously elected President, and J. Briggs, Esq., J.P., and Captain Norwood Vice-Presidents. The following gentlemen were elected to form the Committee, along with the officers of the Society: Messrs. Eldridge, Townend, H. Hall, H. Chaplin, Webster and Williams; Messrs. G. F. Firth and H. A. Halliwell as Hon. Secs., and Mr. Richardson as Hon. Treasurer. The Committee of the School o



Art are willing to find a meeting-room and dark-room for the use of members in their new building, if the authorities at South Kensington give their assent. The subscription for lady and gentleman amateurs or professionals is 4s., and for juniors, 2s. 6d., from now until Oct. 1st, when a new year will commence. The first meeting is to be on April 15th, at 8 p.m., in the Old Town Hall, when an exhibition of lantern-slides will be given.

**Woolwich.**—On the 12th ult. Mr. Calder gave a demonstration on "Lantern Slide Making," successfully exposing and developing a dozen slides, which he distributed amongst the members present; and on Saturday evening, 21st March, a public exhibition of the AMATEUR PHOTOGRAPHER Prize Slides was given in St. Andrew's Hall, Anglesea Hill. The President, Rev. J. W. Horsley, occupied the chair. During the evening a short programme of vocal and instrumental music was ably performed. The high standard of quality of the slides was much appreciated by those present, and especially by the members of the Society. The annual meeting was held on April 9th.

**"Fallowfield's Remembrancer"** for the March quarter keeps up its character for usefulness, and contains several novelties, including the "Parallel Trimmer," referred to in our pages a short time ago. It makes a most useful illustrated catalogue for the amateur, and contains a long list of "job lines," which are being sold off at considerable reductions. We recommend the perusal of it to all who are about to purchase apparatus.

**The "Dutchman."**—The *Boy's Own Paper* for April contains a very interesting article by the Rev. A. H. Malan, M.A., on "Photographing the Dutchman," meaning, of course, the Great Western Railway express train, the Flying Dutchman. The article is illustrated by three process blocks of express engines—"No. 2,001," "The Lord of the Isles," and "Tornado," and a woodcut of an express train going towards Exeter at the rate of fifty miles an hour.

**Eikonogen.**—Eikonogen or amido-B-naphthol-B-monosulphonate of sodium is made according to Dr. Andresen's patent by heating naphthaline with sulphuric acid to 150 degs. The mixture is then poured into twenty times its weight of water, saturated by the addition of chalk, then filtered and precipitated by the addition of carbonate of sodium. On evaporation the crystals of B-naphthol-monosulphonate of sodium are obtained.—*Photographic Gazette*.

## To Correspondents.

THE insertion of **QUERIES AND ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4600. **Watkins' Exposure Meter.**—Would any reader oblige me by saying if a Watkins exposure meter is suitable for timing exposures in carbon printing, and if so, how it is to be used?—R. E. SHAWCROSS.

4601. **Matt-Surface Paper.**—Will some one kindly advise me which is the best matt-surface paper (not platino), and give me a reliable formula for a toning bath, or, if it can be recommended, a toning and

fixing bath in one? I find, with the papers I have tried, that, although I print very deep indeed, by the time the print has got through the toning bath it has lost too much, and becomes practically quite washed out in the fixing. Besides, I can get no tone except a blue purple, which I don't like. All the formula I have seen recommend washing before toning, but I find that I can get a much better tone by omitting the preliminary washing, which seems to take too much out of the prints. Is there any harm in omitting it?—SUTTON.

4602. **Intensification.**—In intensifying, how can a sky be protected from intensification?—HENRY CLARK.

4603. **Hand-Camera.**—Re adapting quarter camera for hand purposes. Will some one say where a suitable case can be had?—I. H. W.

4604. **Winchester, Changing Plates at.**—As I intend having a day's photographing in Winchester, I should like to know if there is a "society's" dark-room or a kindred spirit who would allow me to change my plates.—J. J. T.

4605. **Washing Soda Developer.**—I shall feel much obliged if some reader will give me a reliable formula for developing with soda crystals and dry pyro, my idea being, when from home, to carry a bottle of dry pyro and purchase washing soda in small quantities as I go along.—NOVOCASTRIENSIS.

4606. **Rapidity of Lenses.**—I have a Watson half-plate R.R. lens, 8 in. focus. For taking portraits, should I do better to have a portrait lens, and what beyond rapidity should I gain? How much quicker would lenses working at  $f/4$  and  $f/6$  be than the above-mentioned R.R. lens, supposing all to be of same quality, that is, costing about the same in cash?—ONE YEAR'S AMATEUR.

4607. **Mounting Prints.**—Will some brother amateur kindly tell me how to make a solution for above? I mount mine with starch, but when dry they always curl off. Any hints on the above will be acceptable.—A BEGINNER.

4608. **Card.**—Will some one kindly tell me where thin card may be obtained suitable for mounting wet chloride paper on direct from washing? I wish to finish afterwards on ordinary mounts as usual.—YEAST.

4609. **Matt Varnish.**—How can matt varnish be applied to the glass side of negative without some

**Postal Bromide Club.**—Mr. J. Eaton Fearn, of the *Advertise* office, Utttoxeter, writes to us:—"Will you kindly allow me a little space to inform your readers that I am desirous of starting a post photographic club, devoted to bromide workers and enlargers, and that I shall be very pleased to receive the names of any ladies and gentlemen wishful to join such a club? A special feature of the club will be bromide enlargements. Applications for membership should be accompanied by a specimen bromide print, a stamp enclosed for its return where desired, or for reply. It will save perhaps at the outset to state that only good workers will be accepted. Details of working to be arranged by consensus of opinion, when the desired number of members have been obtained."

**"Wheeler's Bromide Printing Register."**—This is the latest useful little aid to photography issued by Messrs. Geo. Wheeler and Co., of 46, King-street West, Manchester. It is useful for recording exposures of bromide and Alpha papers, lantern slides, etc. Instructions are given "how to print bromide pictures," developing formulae for bromide paper, and instructions how "to paint clouds on negatives," and "to add clouds from another negative." In the Printing Register the following headings are given:—No. of negative or date; Subject; Size of Negative; Distance from Light; Exposure given; Extra Exposure to Sky, etc.; Paper; Developer; Result or notes for future guidance. The book will be found most useful; it is sold for 1s.; by post, 1s. 1d.; neatly bound in cloth, and can be had of our publishers, photographic dealers, or direct from Messrs. Wheeler and Co.

**How to Calculate the Amount of Water to be added to a Liquid to reduce it to a Lower Specific Gravity.**—Subtract the specific gravity of water from the required specific gravity, and the result will be the amount of liquid to be taken. The difference between the specific gravity of the liquid and the required specific gravity represents the amount of water. Example: We have a sample of sulphuric acid, specific gravity 1.845, and it is required to use an acid with a specific gravity of 1.3. How much water must we add to the strong acid to obtain the weak?

$$1.845 - 1 = .845 = \text{the amount of strong acid.}$$

$$1.845 - 1.3 = .545 = \text{ " water.}$$

∴ if we add 545 parts of water to 845 parts of strong sulphuric acid, we shall obtain an acid having a specific gravity of 1.3, or if we add 1 ounce 65 minims (fluid measure) of water to 14 drachms (fluid measure) of strong sulphuric acid, we shall obtain about 23 drachms of sulphuric acid, having a specific gravity of 1.3.

of it getting on to the film side? I apply as ordinary varnish and with the greatest care: cannot avoid some running over on to the film. Sponge or brush does not apply evenly.—POWER.

4610. **Bromide Paper.**—How can you tell the right side from the wrong side of bromide paper, ditto matt sensitised paper?—POWER.

4611. **Madeira, Photographing in.**—Can any reader say if there are any restrictions on photography in the Madeiras, also if any dry plates can be procured there, or use of dark-room for changing? Any hints as to scenery, etc., will be very acceptable to—WESTWOOD.

4612. **Dark Slides.**—Will some one kindly inform me whether metal dark slides are reliable and worth buying, where I can obtain same, and price? Wanted for Lancaster's quarter-plate Instantograph. DRUM.

4613. **Barmouth and Neighbourhood.**—What places are most worth visiting with the camera during a week's stay at Barmouth? Is a dark-room available in that town?—G. W. B.

4614. **Eau de Javelle.**—On April 6th I took two photographs, developed one with pyro, the other hydroquinone. Both appeared very good negatives. Living in the country and having no constant supply of water I tried eliminating the hypo by Eau de Javelle. Result, the whole image eliminated and two pieces of clear glass remain. Where lies the fault? Formula as in "British Journal Photographic Almanack."—CLERICUS.

4615. **Shutter.**—I have a Kershaw shutter with pinholes in the blind. Will some one please tell me how to make or where to buy solution to re-coat it with?—SHUTTER.

4616. **Stops for Lenses.**—Having lost the stops for the following lenses, viz., Dallmeyer's Triplet, for half-plate, and also for his stereo double combination lenses of  $3\frac{1}{4}$  in. focus, I shall be obliged if any of your contributors can give me the diameters, that I may make new stops, or tell me how to calculate what they should be?—STOPS.

## QUERIES UNANSWERED.

April 3.—Nos. 4588, 4589, 4593, 4594, 4595, 4597, 4598, 4599.



## ANSWERS.

4582. **Bath, Dark-Room and Scenery at—**"Progress" will find that the most artistic bits in the neighbourhood of Bath are on the river Avon near Bathampton, and at Saltford. Also some good views at St. Catharine's Glen and in Newton St. Loe Park. As to dark-rooms, try Yabeley (dealer), or Walker (photographic chemist), Keynsham.—O. H. OXFORD.

4590. **Pinholes.**—Spot out with a fine water colour brush charged with some transparent non-actinic colour, say, crimson lake or gamboge, or even a mixture. The colour must be used almost dry, or it will settle in a circle round the spot, leaving the place it is intended to cover bare.—WIZARD.

4591. **Dark Slides.**—James Thomson, Lintmill, Portgordon, will supply wood ready grooved for slides, also hinged shutters for same.—JAMES WOOD.

4592. **Developer for Hand-Cameras.**—I fancy "Lensigraph" will find the following work well:

Ammonia (liquid) ... 1 oz.  
Potassium bromide ... 2 dr.  
Distilled water ... 1 oz.

To develop, 3 gr. dry pyro are diluted with 2 oz. of distilled water, and about 8 to 10 drops of the above added. Full density may afterwards be attained by the addition of a few drops of ammonia ("880"). Or a good eikonogen developer is:

(A)  
Eikonogen ... 23 gr.  
Sulphite of soda ... 5 dr.  
Distilled water, to make ... 10 oz.

(B)  
Carbonate of potash ... 2 oz.  
Distilled water, to make ... 10 "  
For development, use A and B in equal parts.—WIZARD.

4597. **Prints Curling.**—I do not know of any remedy for this, but have found that if mounted on some thin backing, such as thin white wrapping paper (tested for acidity), the tendency to curl and crack is considerably lessened. Some papers are more liable to curl than others, which is perhaps accounted for by a difference in albumenising.—WIZARD.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING's post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT.

**NOTE.**—In this column we cannot advise upon purchase of APPARATUS, PLATES, PAPER, or PHOTOGRAPHIC MATERIALS.

Advice will be given upon questions of "Photographic Procedure," negatives and prints will be criticised, and every help given to the worker in photography.

**T. HALL.**—(1) Your best plan would be to develop a plate till it shows quite dark all over except the white spots, if you like to expose a couple of plates and forward them to us, we will develop and send you one fixed and one unfixed plate, to show you just how far to develop. (2) The cause of some negatives taking longer than others to print is due either to some being denser than others or to the colour of some being more yellow than others. (3) When you can see the outline of the negative image against the white paper, probably the plate is insufficiently developed. (4) We are afraid we can hardly put the answer into words; the only thing to do is to see a good negative.

**TONER.**—(1) Although some gold may be deposited, the chances are that there is always some gold in solution which may be further utilised by adding fresh gold. (2) Chloride of gold was first added to the salting of albumenised paper by Hennan, and has been occasionally used without ever coming into general practice.

**ESBROS.**—We should say that the mountant in question is a capital thing to cause fading. Do not use it. The toning bath in question requires saturating with chloride of silver before it will tone. Have you done this?

**P. S. ABERY.**—The rust is probably the cause of the stain, though it would be decidedly advisable to fix longer and wash more. We are afraid your work is hardly up to competition standard yet, though the samples of your work sent may not be the best you have.

**MRS. E. CULVERHOUSE.**—We have received your letter regarding the "Seven Ages of Man," and will give it our consideration. Please accept our thanks **T. W. W. MELBUSH.**—Shall be very pleased to make your acquaintance when you are in London. Will you kindly advise the day you are likely to call upon us, to ensure our being at home?

**F. H. J. REUL.**—Lens received; will forward with report in due course.

**PENDRAGON.**—(1 or 2) Either will answer your purpose. (3) The "Amateur Photographers' Annual"

will be found a most useful book for you to refer to. **STANLEY L. WELTON.**—Certainly do not leave the prints in the toning bath.

**MRS. CLASBY.**—The lens has been sent on approval and duly acknowledged.

**R. S. TRESILIAN.**—The work is progressing, but it will be a week or two before the prints are returned. We thank you for your good opinion of the "Amateur Photographers' Annual."

**REV. G. F. WILLS.**—You can have the "Monthly Competition slides" down if you like conditions:—A packing fee of one shilling, and payment of carriage both ways.

**A. T. NEWINGTON.**—Negative reached us safely. We note your suggestion as to size of plate used, and will, as far as possible, give the size. You might send a few lines descriptive of the scene of your picture, to incorporate with our comments in the Report.

**C. W. BASSANO.**—Your print will quite fulfil the conditions of the last competition.

**RINGROSE ATKINS.**—See our reply to Rev. G. W. Willis, and please let us know which set you would like to have sent.

**J. B. KING.**—No Society nearer than the West London. Write the Secretary, Mr. H. Selby, 42, Ladbroke Grove Road, S.W.

**JAMES WOOD.**—Glad to know that you have such a good opinion of our "Annual." Thousands have been sold!!!

**B. TYDEMAN.**—Many thanks for your letter, which you will note our publishers have made use of.

**A TWO YEARS' SUBSCRIBER.**—There is a Society at Tooting; the Secretary is Mr. G. H. Dollery, Ivythorpe, Vant Road, Tooting; and another at Wimbledon; Secretary, the Rev. H. G. Allfree, 28, King's Road, South Wimbledon.

**A. BACKHOUSE.**—We hope to insert what you want in a week or so; pressure on our space has only prevented us from doing so before.

**F. C. KERDEL.**—We should have been inclined to make your sitters prop one another up, as now they give one a curiously unsafe idea. The plate is well exposed and print well printed and toned.

**MONA.**—The prints are good studies of pretty little bits, and one at least would be much improved by the absence of the human figure, which is quite out of keeping.

**H. F. LINGING.**—(1) It is very questionable, but undoubtedly sulphite was first used as a preservative only, but negatives undoubtedly have a special character when developed with sulphite, which is rather inclined to clear glass shadows. (2) Just the same results can be obtained without it. (3) The meta salt is the more powerful preservative, and may tend to keep back the detail in the shadows if too much is used. (4) The idea of using the ammonia and bromide is to prevent fog, and the developer in question gives very soft delicate results, which is probably why the gentleman you name uses it. Your paper to hand; we will try it and let you have the results.

## Quarterly Examinations in Photography.

## QUESTIONS.

- What is the optical centre of a lens, and how would you determine the position of the same?
- Write a brief note on pinhole photography, and how would you determine the diameter of the hole for a given plate and distance?
- Forward a print from a cloud negative, and state (a) the position of sun with regard to the camera, (b) time of day, (c) method of obtaining the negative.

(Latest Day for Answers—April 20th.)

## RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photo-

graphic matters and contributors to the photographic journals will not be allowed to compete.

**NOTE.**—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"

AMATEUR PHOTOGRAPHER,

1, CREED LANE,  
LONDON, E.C.

## Monthly Competition.

## XXIII.—INLAND SCENERY.

Title of Photograph.	By Whom Sent.
A Wayside Cottage ...	J. R. Roddick
A Bit of Devon ...	W. L. Jones
On Dartmoor ...	Major J. D. Lysaght
A Quiet Brookside ...	C. W. Bassano
The Mill in the Hole ...	F. M. House
Solitude ...	G. Lamley
View on Loch Lomond ...	R. C. C. o'de
Fill Dyke ...	E. B. Wain
The Old Mill ...	A. J. Golding
A Roadsides Cottage ...	F. K. Pounder
Behind the Hill the Gleam of Dying Day ...	E. J. Fielden
Chequered Light ...	T. Howlett
St. Martin's Little Summer ...	F. Cresswell
A Pleasant Path ...	E. Winn
Near Winchester ...	H. J. Perry
The Brook and its Banks ...	J. Tims
Kirkstall Abbey ...	J. Waters
Winter ...	J. O. Grant
Awaiting Fido's Pleasure ...	J. Keasley
The Brook ...	H. Irving
Winchester from Cheese Hill ...	J. J. Broome
On the High Road ...	D. Forbes
An October Evening ...	E. E. Winslade
Old Chantry ...	A. G. Paterson
Summer Evening ...	R. N. Brealy
A Cloud Effect ...	F. G. Sheffield
Billy Mill ...	T. Grieve
Iron Bridge ...	O. H. Freeman
Rustic Bridge and Lake ...	S. J. Bradburn
Our Italian Home ...	Miss F. S. Stone
Bird's-eye View of Goring and Strealey ...	J. A. Booth
Waterloo Lake ...	A. C. Beilby
A House at Pau ...	Miss B. Anneley
A Quiet Spot ...	E. G. Galletly
A Shady Nook ...	Rev. G. F. Sharland
Sutleigh Cleave ...	Miss C. M. A. Cresswell
The Tiger's Dining Hill ...	Major E. F. Becher
Chapel Field, Norwich ...	T. B. Fuller
An Unexpected Peep ...	Miss Hardman
A Carthusian Monastery ...	Miss M. Watson
Roslin Glen ...	W. W. Ritchie
A Saxon Church ...	L. Brown
Le Chateau, Walzin ...	A. Wilkinson
View near Sandown ...	H. Nye
A Road at Buttermere ...	S. O'Hanlon
A Hazy Morning ...	E. H. Jeffrey
The Iam Rock ...	F. C. Lees
A Cloudy Day ...	R. Heron
Bridge in Arborthan Gardens ...	E. Pearson
Fillingham Mere ...	Mrs. Benzon
Gillgrange, Yorkshire ...	R. K. Ambler
A Country Road ...	A. Peddie
St. Catharine's Chapel ...	Miss M. E. W. Barnard
Waterfall, Ivybridge ...	C. Smallridge
The Round Ring ...	F. Udale
Through Grass grown Aisles ...	A. L. M. Bonn
A Mountain Path ...	I. Brooks
View near Wylam ...	J. G. Watson
In Dean Wood ...	J. T. Brierley
Moreton Hall, Cheshire ...	H. Maynell
View from Monks' Abbey ...	J. W. Horton
Down the Road ...	R. C. Maled
Bonechurch, I. of W. ...	H. J. Thorne
A Misty Morning ...	Miss F. S. James
Dussistock ...	Mrs. Wilson
A Rustic Scene ...	J. H. Thornton
A Shady Path ...	H. T. Hawthorn
Mochrum Castle ...	H. McMaster
The "Cat and Fiddle" ...	R. Grindle
Entrance to College, Cobham ...	A. L. Spiller
The Wands Point, Malvern ...	P. A. Crecke
Cottages on Oakley Green ...	H. W. Sanford
A Hampshire Home ...	C. Blomley
Greenwich Hospital ...	A. R. Berry
In Vizella ...	M. M. Lucio
In Kew Gardens ...	A. James
Broomhill Point ...	F. S. Worsley
A Country Road in Essex ...	A. J. Jeffreys
Lovers' Walk, Dovedale ...	A. T. Newington



## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. **Halfpenny Stamps preferred.** A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

**Deposits** for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

**Advertisements** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

**Backgrounds.**—Six backgrounds in flatted oils, on linen and rollers, new and perfect, work of advertiser during dull business, river scene, cottage doorway, mansion grounds, garden scene, and two interiors, size 8 ft. by 6 ft. 6 in.; price 12s. 6d. each, bargains; price no criterion; photographs forwarded. — William Hare, Photographer, Sutton, Surrey.

**Bicycles.**—Cushion tyre Safety, just new, cost £14, balls everywhere; £7 10s.; approval. — T. Dereham Road, Norwich.

**Psycho Safety,** ball bearings all over, except head, nickel-plated parts, Bowin's adjustable pedals, in splendid condition; cost 19 guineas; price £9; apply by letter for appointment. — Psycho, Hawthorne Cottage, Upper Sydenham.

**Burnisher, etc.**—Marion's cabinet burnisher, cost 30s., price 15s.; or exchange Thornton-Pickard 2½ in. time shutter. — Miller, 23, Highbury Grove, Islington, London.

**Camera, etc.**—Fine half-plate camera, 3 backs, equal new; 75s.—14, Melville Street, Ryde.

**Camera,** half-plate, new, reversing and swing-back, with compound front, one double dark-slide; what offer for cash?—Head, 30, Chapel Road, West Norwood.

**Quarter-plate square camera,** long focus, every movement, three double backs, Lancaster's International stand; 27s. 6d.; approval. — Morse, 7, Baldwin's Place, Gray's Inn Road.

**Quarter-plate portable camera** (by Hare), with changing box, carrying twelve plates, nearly new. — A. Elliott, Holme Lodge, Hereford.

**Lancaster's quarter-plate Instantograph,** fitted in case as hand-camera, can be used with or without case, complete with four metal slides, tripod, finder, etc.; £2; canvas camera case, quarter, 3s.; Tyler's syphon washer, 4s.; Kershaw shutter, quarter, 10s. — Hancock, 5, New Porter Street, Sheffield.

**Cameras, Lenses, etc.**—Instantograph, quarter-plate, 1890 pattern, good condition, lens, shutter, dark-slide and stand, case with strap; 33s.—No. 133, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Camera,** quarter-plate, lens, dark-slide, and stand, complete, quite new; only 14s. 6d.—No. 134, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Watson's half-plate Light Premier camera,** three double dark slides, all brass bound, Ross's 8 by 5 symmetrical lens, solid leather case, with folding tripod, bought last year, cost £19, perfect condition, £12.—Mrs. Dowell, Larkhill Terrace, Blackburn.

**Whole-plate bellows camera,** will extend 2 ft. for copying, square reversible swing-back, three double slides, with half and quarter plate holders, lens, stops, cap, pneumatic shutter, Kennet stand, printing frame, two celluloid dishes, almost new; the lot £10.—L. C., 12, Courthouse Road, London, N.W.

**Whole-plate Stereoscopic Co.'s best light camera,** every movement, three double backs, Optimus 9 by 7 R.S. and W.A. lenses, pneumatic shutter, focus-

sing cloth, tripod, solid leather case, equal new; cost £28 10s. 6d.; price £17 10s.—Bygrave, 15, Canterbury Road, Brixton, S.W.

**Half-plate Instantograph camera,** three double backs, tripod, Dallmeyer's R.R. lens, complete in case; £3.—Robt. Woolman, Stockton-on-Tees.

**7 by 5 box camera,** stand, quarter-plate lens, complete, chance for beginner; 10s.—Mace, Garden Cottage, Cheltenham.

**Tourist whole-plate camera,** all movements, three double backs, R.R. lens, in solid leather case, lock and key, best ash sliding stand, all in good condition, price £7; 5 by 4 bellows camera, four solid backs, view lens, 3-fold stand, fitted into mahogany case, price 59s.—Lewis, 35, Broad Street, Reading.

**Half-plate camera,** mahogany, waterproof, extending bellows body, with achromatic single lens for portraits or landscapes, with stops and cap, removable hood, and double dark-slide, with folding back, carrier to fit quarter-plates, with folding tripod stand, complete; price 34s.; carriage paid.—E. Irwin A. Mills, 35, Manchester Road, Rochdale.

**Collins' Pocket cameras** in cases, 5 by 4 and quarter-plate, each with six double backs, also fixed focus hand cameras, working with above backs, Ross' lenses, Nos. 2 and 3, portable and Shew's Eclipse, above equal to new; no approval.—Mr. H. Miles, 19, Kensington Crescent, W.

**9 by 7 studio camera,** dark-slide, and carriers, good portrait lens, oak studio stand; 40s.; call any evening.—Davis, 6, Lethian Road, North Brixton.

**Coil, etc.**—Large induction coil, 2 in. spark, commutator, cost £6; 4-cell bichromate battery, new, cost £2. Wanted, good camera, or cash offers.—190, Heyside, Royton.

**Developer.**—An amateur, who has first-class developer for hand-camera work, will send formula for six stamps. — J. Brown, 139, Queen's Road, Bayswater.

**Hand-Cameras, etc.**—Adams' Ideal, one movement; specimens free; offers? — A. H. Short, 16, Perryn Road, Acton.

**Gentleman** will let his No. 3 Kodak on hire, if value is deposited with Editor; terms according to length of time required; no cards.—Toulmin, Braeside, Sunninghill, Berks.

**Hand camera,** takes 14 quarter-plates, almost new, cash 45s.; also Presto hand-camera, three dark-slides, chemicals, etc., 10s. 6d., or the lot 50s.—Digan, 123, St. Mark's Road, Notting Hill, W.

**On sale, half-price,** Turnbull's hand-camera, perfect.—Longden, Wharfedale Chambers, Sheffield.

**Hand-camera,** made to order, 15 quarter-plates, focus every picture if necessary, no dark-slides, f/6, worth £10; only £5 10s.; can be seen any evening.—52, Jermingham Road, New Cross.

**Optimus Magazine quarter hand-camera,** nearly new; cost £6 6s.; price £4 4s.—J. M. Turnbull, Rose Street, Edinburgh.

**Franks' Presto detective hand-camera,** lens, slide, developing and fixing solutions; price 6s.—L. Bagshaw, Union Street, Doncaster.

**Lancaster's Omnigraph detective,** best leather, quite new; 21s.—170, High Street, Rimgate.

**Lancaster's detective, quarter-plate,** covered morocco, with extra changing box; cost, last August, £4 12s. 6d.; price £2 10s.—J. Williamson, 14, Church Road, Hove, Brighton.

**Automatic hand-camera,** for 12 quarter-plates, lens, instantaneous shutter, and finder, complete, thorough working order, a bargain; 40s.—A. Mercer, 16, King Street, Sparkbrook, Birmingham.

**Lenses, etc.**—Great bargain, 7 by 5 rapid rectilinear lens, f/8, Waterhouse stops, as new, for 19s. 6d.—91, Slad Road, Stroud, Glos.

**Wide-angle rectilinear (Steinhilber),** 5 in. focus, 50s.; pair of Grubb's single, 6 in., matched for stereoscopic work, 60s.—G. M. Iliff, 11, Martineau Street, Birmingham.

**Perken, Son, and Rayment's Optimus Euryscope lens,** 7 by 5; list 94s. 6d.; highest cash offer accepted; not used half a dozen times.—Whitham, 6, Whalley Range, Padham, Lancashire.

**A c.d.v. lens** (by Ross), £3 3s.; also Lancaster's half R.R. lens, iris diaphragm, £2; approval; deposit.—Clarke, Dentist, Louth, Lincs.

**9 by 7 rapid view lens,** best quality, conical mount, Waterhouse diaphragms, 21s.; rigid sliding-leg tripod, 8s. 6d.—Setacci, 41, Waldemar Avenue, Fulham.

**5 by 4 rectilinear,** wide-angle, splendid lenses; 13s. 6d. each.—D. Hall, Pinfold Lane, Lancaster.

**Lancaster's single wide-angle lens,** half-plate, 9s.; Jeffries' half-plate washer, 7s. 6d.; Vevers' 7s. 6d. burnisher, 4s.; Abney's 2s. 6d. book on silver printing, for 1s. 6d.; all good as new.—E. Avery, 59, Dock Street, Newport, Mon.

**Lenses for sale,** Ross's 5 by 5 R.S., £3 10s.; Wray's 5 by 4 W.A. rectilinear, £3; Wray's 8½ by 6½ landscape, 32s. 6d.; also Kershaw shutter, whole-plate, 15s.; all in first-class condition.—W. Milburn, Brunswick Street, Carlisle.

**Suter's 8½ by 6½ single landscape lens;** £2.—A. Parkes, Ardllea, Dundrum, Dublin.

**Ross No. 5 portable symmetrical lens,** scarcely used; 75s.—Acworth, Sheldmoor, Brondesbury.

**Lancaster's half-plate Rectigraph lens;** price 33s.; deposit.—A. Huddart, Eskdale, Carnforth.

**Lancaster's Special Instantograph lens,** See-saw shutter fitted, new, suit hand-camera, 12s. 6d.; L'Automatique shutter, 12s.; Dallmeyer's whole

plate R.R., 95s.; excellent R.R., 18 by 15, 27 in. focus, 155s.—Hutchings, Hairdresser, Baling Dean Optimus 5 by 4, with diaphragms, excellent; 21s.—14, Melville Street, Ryde.

**Sets.**—Watson's half-plate Acme camera, turntable tripod, brass-bound, Eastman's roll-holder, specially fitted with mahogany shutter, portable symmetrical lens, travelling case, £15; also Luzo detective camera, square pictures, £2 10s.; Lancaster's 12 by 10 enlarging camera, £1; or, together, £3.—E. A. Walker, 102, Lexham Gardens, London.

**Optimus long-extension half-plate camera,** square, with three double dark-slides, Optimus rapid rectilinear lens, 7 by 5, carrying bag, tripod, lamp, zinc washer, nearly new; offers; approval.—H., 11, Lyon Street, Tynemouth.

**Lancaster's quarter-plate Instantograph,** with patent adjustable diaphragms and instantaneous shutter, only used few times, with universal 3-fold stand, two mahogany and three Tyler's double slides; buying half-plate; price £5.—Naylor, 77, Cadogan Square, S.W.

**Slab.**—Glass slab, 34 in. by 28 in., ¼ in. thick; offer wanted.—Ellesmere House, Patricroft.

**Sundries.**—The whole contents of amateur photographic studio, coming down for street improvements, to be sold at half original cost. A 12 by 19 square long-focus camera, two double backs, £5 15s.; a 19 by 8 conic leather bellows camera, 3 double backs, turntables, and all movements, £5 15s. 6d.; half-plate conical leather bellows camera, 3 double backs, £2 15s.; four tripods, six lenses, hot rolling press, 15 in. silver-plated rollers, carved oak chair, swing backgrounds, a mahogany enlarging lantern, 7 in. condensers, and a large quantity of sundries; the whole in first-rate condition, and will be sent on approval; deposit only; write for list.—J. Wm. Heaton, 29, Scott Street, Keighley.

**Will exchange pair young thoroughbred tumblers for complete 1890 AMATEUR PHOTOGRAPHER.** — K. Smith, Hamper Hill, Watford.

**Cassell's "British Battles,"** four vols., unbound, 20s.; Stirn's Vest camera, 13s. 6d. Wanted, three half-plate metal slides for Lancaster's Instantograph.—Robert Hamilton, Ladeside Street, Strathaven, Scotland.

**Violin, etc.**—Valuable bargain. Fine mellow-toned violin, in perfect preservation, suit lady or gentleman for orchestral or solo playing, complete with bow, balza-lined case, and accessories; take 15s. 6d. for the lot; violin alone worth double; money willingly returned if not approved. About 20s. worth of unsold music given in free.—Mrs. Graham, College Buildings, Ipswich.

**Washer, etc.**—Large printing washing tank, about 1 ft. 8 in. by 1 ft. 6 in. by 1 ft. 6 in., with spray and perforated tray (by Marion), in good working order; also Oules' retouching desk (by Marion), scarcely used; what offers? — L. H. Legg, 65, Shooter's Hill Road, B'ackhatch, S.E.

## WANTED.

**Book.**—Robinson's book about the studio.—T. W. Milburn, Battle Hill, Hexham.

**Cameras, etc.**—Second-hand half-plate camera, complete, cheap, good condition.—Particulars to H. Grut, 262, Fenton Place, Newington, London.

**Lancaster's old-pattern Instantograph,** half or whole plate, cheap.—Cain, 2, Orisdale Terrace, Cheltenham.

**Lancaster's or other make half bellows camera and slides,** without lens.—M., 367, Euston Road.

**Cameras, Lenses, etc.**—Good quarter-plate camera and lens; exchange Jubilee envelopes.—Turner, Woodville, Lytham.

**Camera,** three wooden dark-slides, tripod, and wide-angle Rectigraph lens, on approval; will give new hand-camera, or violin and box, etc., and cash.—Jackson, 12, Oldham Road, Failsworth, Manchester.

**Lancaster's 5 by 4 Instantograph camera,** in good condition, with or without lens; approval; cheap.—Robert Banks, Eastlaw, Eccles, Manchester.

**Camera Case.**—Strong leather camera case, half-plate, cheap.—Liversedge, 90, Selborne Street, Liverpool.

**Hand Cameras, etc.**—Swinden and Earp's 5 by 4 detective, No. 4 Kodak, regular or junior; also second-hand lantern slides, sets, stories, etc.—W. V. Morris, Parade, Cork.

**No. 2 or 3 Kodak.**—Particulars and condition to B., 1, Dermody Road, Eastdown, Lewisham, S.E.

**Lenses, etc.**—Good quick-acting cabinet portrait lens, in exchange for Dunkley's 7 guinea reversible handle perambulator, or nearly new lady's gold watch.—Particulars of Cox, Swanley.

**Pair of 4½ in. or 5 in. stereoscopic lenses,** by first-class maker; approval.—A. Huddart, Eusdale via Carnforth.

**Lens, 9 by 7 doublet,** lowest price; state maker.—Duke's, Llangadock, South Wales.

**Roll Holder.**—Eastman's quarter roll-holder.—Longden, Wharfedale Chambers, Sheffield.

**Set.**—Good half or whole set; exchange Facila hand-camera, new, cost 84s.—King, 521, Harrow Road, W.



# McKELLEN'S CAMERAS.

DIRECT FROM MAKER TO USER.

To users of Photo Instruments I will allow a discount of TWENTY PER CENT. for Cash with order OFF McKellen's Photographic Specialities, except the "Detector," from which only 10 per cent. will be allowed.

"Cauldon Place, Long Row, Nottingham, Feb. 27th, 1891.

Sir,—The Camera, etc., came safely to hand this morning. I am very pleased with the improvements made in it since I had my 10 by 8, and I shall find them particularly useful in making architectural studies.

Yours very truly, ARTHUR MARSHALL."

"67, St. Andrew Street, Cambridge, Feb. 27th, 1891.

Dear Sir,—I am very pleased with all the goods you sent me, and will certainly apply to you again if I should ever want anything else in the same line.

Yours truly, W. FAWSSETT."

Place your orders promptly to secure early delivery.

**T. E. MOULT, Photo. Dealer,**  
9, CLARENCE STREET, ALBERT SQUARE, MANCHESTER.

NOW READY, PRICE ONE SHILLING, POST FREE.

## THE PHOTOGRAPHIC REPORTER.

CONTENTS for APRIL, 1891.

Frontispiece: "A Winter's Morning," by T. S. MANSELL, L.D.S.

### Editorial Summary.

The Frontispiece, "A Winter's Morning"—Liverpool Exhibition—New Societies: Liverpool, Ashton-under-Lyne, Dublin, Wakefield, Chelmsford—A Stereoscopic Club—Single Landscape Lenses for Architecture—Crystal Palace Photographic Exhibition—Camera Club Conference: the Programme—The Federation of Societies—The Glasgow Exhibition: a Guarantee Fund raised; Photo-Mechanical Work a Special Feature—Exhibition at Gloucester—Lippmann's Photography in Natural Colours (Illustrated)—Why Ladies should take up Photography—How to Hold a Hand Camera—The use of Rough and Smooth Papers for Photographic Printing—Lending Lantern Slides on the Circulating Library System—Ourselves—Lantern Improvements—Merchandise Trade Marks Act: Necessity for further Legislation.

### Publications of the Month.

Amateur Photographers' Annual—Intensity Coils: How Made and How Used—The Photographic Quarterly—Colloquial French for Travellers—Jahrbuch für Photographie und Reproductions-Technik—The Ilford Manual of Photography.

### Apparatus, Novelties, etc.

Mr. William Prouting—Messrs. George Houghton & Sons—

Mr. Roberts—Mr. C. Cusworth—Mr. J. R. Gotz—Messrs. J. Lancaster & Sons—Mr. W. Tylar—Messrs. Taylor, Taylor, & Hobson—Messrs. J. Griffin & Sons—Messrs. Adams & Co.

### Monthly Photographic Competition, No. 22.

Illustrations: "Foot of Aber Fall"—"Winter"—"Bolney Wood"—"Study in Black and White"—"A Christmas Visitor."

### Articles.

Contact Printing and Enlarging on Bromide Paper. A. C. KING.—Enlarging. J. W. MUNRO, B.A., Lond.—A Visit to Algeria and Morocco with the Camera. W. H. WEBSTER, L.R.C.P., Eng.—Suggestions. J. MARTIN DICKINS.—Landscape Photography. Dr. WARDROP.

### "Amateur Photographer" Monthly Lantern Slide Competition.

Competitors' Names, Title of Slides, Plate and Developer used.

### Summary of Societies' Meetings.

### Directory and Official Announcements.



# The AMATEUR PHOTOGRAPHER

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FRIDAY, APRIL 17, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.

**OUR VIEWS.**—The Quarterly Examinations—Entry Forms for Competitions now Ready—The Public Schools' Competition, Ladies' Second Competition, and Photography at Home—The Explosion of a Regulator on an Oxygen Cylinder—Gloucester Exhibition—Crystal Palace Photographic Exhibition—Portrait of Thomas Carlyle, by Mr. Whistler—Exhibition of 1890 Prize Lantern Slides at Creed Lane—The Camera Club Conference—Mr. Louis Meldon's and Mr. T. White's Instantaneous Photographs—Miss Balfour's Photography.

**LEADER.**—Home Portraiture—English v. German Plates.

**LETTERS.**—Photography in Natural Colours (Farbenlehre)—Explosion of a Gas Regulator (John A. Hodges, Werner, H. E. Soames, and Richard Horton)—Gelatine Slides for the Lantern (J. A. Noble)—A Lost Water Way (Alfred Watkins)—The French Developer, Christallos (Etheldred Dillon)—Celluloid to Focus On (Edward Barnes, J. R. Gotz).

**COMMUNICATED ARTICLES.**—Study in Art for Photographers, Illustrated (Lambert)—Instantaneous Photography (Harrison).

**NOTES.**—Our Contemporaries—Edinburgh Centre—Thursday Evenings at the Camera Club.

**EXHIBITIONS.**—Liverpool—New English Art Club—Camera Club Conference.

**SOCIETIES' MEETINGS.**—Ashton-under-Lyne—Birkenhead—Birmingham—Brechtin—Brixton—Croydon—Croydon Micro.—Darlington—East London—Glasgow—Hackney—Holborn—Keighley—Leicester—Leves—Liverpool—Morley—Newcastle-on-Tyne—North London—North Middlesex—Oxford—Paisley—Peterborough—Putney—Richmond—Sheffield—Staffs Potteries—West London—West Kent.

THE "Quarterly Examinations" have given great satisfaction. They are really examinations, and those who enter have practical work, and cannot take their answers from text-books. One student writes:—"Allow me to thank you very much for undertaking this work; it is a step in the right direction. I have learnt a lot, as no doubt my brother competitors have done, from taking part in it. I hope those who can spare time will enter." The winner of the first prize, Mr. L. A. Burrow, selected a 7 by 5 Optimus R. R. lens; the winner of the second prize, Mr. H. Leach, a sundry lot, including Thomas's and Mawson and Swan's plates, Fry's bromide paper, Obernetter paper, chloride of gold, a copy of "AMATEUR PHOTOGRAPHER'S Annual" and "Competitive Papers on Photography." The winner of the third prize has not yet advised us of his wishes.

From the note in last week's issue, it will be seen that the AMATEUR PHOTOGRAPHER "Quarterly Examinations" require steady, sober study and application. The scheme for the current quarter is extensive, and will cover a great deal of very interesting work. We shall be glad to receive the names of intending students, and hope many will be induced to enter for these examinations.

In another column we announce that entry forms are now ready for the following competitions:—

"Photography at Home" .. June 30.

"Public Schools Competition" .. June 17.

"Ladies' Second Competition" .. Aug. 22.

These entry forms will be sent on receipt of stamped addressed envelope. In connection with the "Public Schools" we may add that we shall be pleased to send entry forms to any head-master of schools where the boys (under seventeen) go in for photography. The conditions are not stringent, and we hope the boys will compete in large numbers.

Last year we had a most successful "Ladies' Photographic Competition," and we hope that many of the ladies who enter our "Monthly Competitions," and who send us very capital work, will contribute to the AMATEUR PHOTOGRAPHER Ladies' Second Photographic Competition. We shall hope to be able to arrange for the prize photographs to be reproduced in one or other of the excellent ladies' papers that are now published. It will be remembered that last year the *Lady's Pictorial* was good enough to devote several pages to our competition.

MUCH interest is being taken, as will be noted by our correspondence columns, in the matter of "the explosion of a regulator on an oxygen cylinder." We cannot pretend to clear the matter up, but certainly agree with Mr. Hodges that it is a matter of such importance that those interested, and there are very many, should meet and discuss the matter, after having inspected the damaged regulator. We shall be glad to give the use of one of our rooms for the purpose, if it be thought desirable.

THE second triennial photographic exhibition of the Gloucestershire Photographic Society will be opened at Gloucester on the 20th inst. We understand that there will be an excellent show of photographs. Every evening lantern demonstrations will be given, the demonstrators being Messrs. Paul Lange, W. D. Welford, Charles W. Hastings, G. Embrey, and T. M. Brownrigg. The society's silver and bronze medals will be placed at the disposal of the Judges, Messrs. H. P. Robinson, V. Blanchard, and E. Brightman.

THE Crystal Palace Photographic Exhibition will by the time this paper is in our subscribers' hands be in full swing. Some delay has been caused through the transmission of



photographs from Liverpool. There are a splendid collection of pictures, and a very good show of apparatus, notwithstanding that a section of the photographic trade have chosen to stand aloof and refuse the invitation of the Crystal Palace Company. We are glad to see such thoroughly representative firms as Messrs. Watson and Sons, Geo. Houghton and Sons, D. Noakes and Sons, etc., have extensive stalls. The Crystal Palace Photographic Exhibition should be, in apparatus, as it is in photographs and lantern-slides, the show of the year. The arrangements for the lantern shows are most perfect. Some splendid collections of slides have been received from all parts of the kingdom, and very fine exhibitions will result. The lantern has been specially built from Mr. S. G. B. Wollaston's specifications, and the lenses by Messrs. Taylor, Taylor, and Hobson are, we understand, most perfect. For ourselves, we shall look with pleasure upon the success which must attend the Crystal Palace Exhibition, and we can only regret that a few of the leading firms of apparatus manufacturers and dealers should have thought fit to abstain from exhibiting. The same action was taken by leading firms in the cycle trade upon the occasion of the last Stanley Show, with the result that many small firms exhibited and took large orders, and, in fact, established their business through the absence of better known firms. Next week we shall be in a position to commence our review of both pictures and apparatus. In the meantime we may assure our readers that if they visit the Palace they will have no cause for regret, and, in fact, will find a most excellent collection of photographs by both amateurs and professionals.

THE portrait of Thomas Carlyle, which has just been purchased by the Glasgow Corporation for one thousand guineas, is well worth a visit at the Goupil Gallery. Mr. Whistler has attained a high success in this portrait of the sage of Chelsea. He is seated with his hat on his knee, and his hands resting on a stick. The loving care bestowed by Mr. Whistler on this painting has met with the widest appreciation from those who saw Thomas Carlyle deep in thought. The Glasgow Corporation is to be congratulated on its public spirit in procuring such a valuable picture, which redounds to the credit of its talented artist.

MANY of our subscribers resident in London and the suburbs have possibly not had an opportunity of seeing the AMATEUR PHOTOGRAPHER 1890 Prize Lantern Slides. We have pleasure in stating that they will be shown on Monday evening, the 27th inst., at our offices, 1, Creed Lane, Ludgate Hill, commencing at seven p.m. There will be no charge for admission; the exhibition will be open to all on presentation of visiting card. The first part of the evening will be devoted to the showing of the slides contributed to the last Monthly Lantern Slide Competition this season—"Architecture, Interior and Exterior." We hope there will be a large attendance. Next season we shall arrange to have once a month, a photographic evening, the first part to be taken up with a demonstration upon any new process in photography, and the second part to an exhibition of lantern slides; at the same time the Monthly Competition prints will be on show. We hope by this means to be in more personal touch with, certainly, our metropolitan subscribers. The "Monday afternoons" have become exceedingly popular, and the members of our staff are delighted to welcome those who require assistance or advice upon photographic manipulation and procedure, and to give every help to the worker in photography.

THE Camera Club Conference closed on Wednesday with

a dinner at the "Criterion," under the presidency of Capt. Abney. At the meeting at the Society of Arts, the chief paper was one by Major Nott on "Photography and Illustrated Journalism," in which the reader contended that photographs of historical events were likely to be of more interest than sketches by artists, as they would be absolute records of the facts untainted by any feeling on the part of the photographer, whilst the artist would probably strive after artistic effect rather than historic accuracy. Mr. Sutton's paper on "A New Process of Making Photo-mechanical Blocks" was of some interest to those who like to experiment in the direction of mechanically photographing their own pictures, the plant required not being prohibitive. The other papers, by Professors C. V. Boys and Minchin, were clever and interesting, as was also Mr. Elder's communication with respect to Mr. Carey Lea's new allotropic forms of silver.

MR. LOUIS MELDON and Mr. T. White gave an exhibition of their lantern slides before the Ohne Host Cycling Club, Dublin, on the 7th and 8th inst. Many slides of instantaneous pictures of sporting events, etc., were shown, and great admiration was freely expressed for the work of both exhibitors.

WE notice that Miss Balfour, sister of the Chief Secretary for Ireland, has been using the camera in the course of her tour with Lady Zetland through the congested districts of Ireland. The views will be very interesting, and will have some political importance in the near future, when, no doubt, many persons will have the opportunity of seeing prints from them.

### HOME PORTRAITURE.

ONE of the greatest faults in amateur portraiture is the use of the doublet or rapid rectilinear lens. This is a statement that will surprise many who read it; still it is, we think, none the less true. The rectilinear lens has such a depth of focus and cuts so sharply that we lose that softness and roundness which is obtained by the use of the portrait lens, and it is difficult to compensate for this by any system of throwing the image out of focus; and the rectilinear lens has such an enormous width of angle that we have to get so near the object to obtain an image of any size, that we have consequently an increase of focal length and diminution of ratio aperture, which makes our lens abnormally slow. We may use either a portrait lens or, as these when of good quality run into a heap of money, we may get the next best lens for portraiture, and that is the single lens of fairly long focus, working at rather a larger aperture than usual, viz.,  $f/8$ . There is sufficient spherical aberration present with such an aperture as a rule as to have no baneful influence and yet give us roundness and softness. Personally we have rigged up a compromise, and that is as follows. We managed to get hold of some unmounted single or meniscus landscape lenses, and we use these in a mount specially made for us, and we are thus able by a little calculation to obtain any focal length and any ratio aperture we want. The lenses are of 22, 18, 16, 13, 10, and 8 ins. focus respectively. We had a tube of brass made with a cell to fit in each end; into these cells we can slip any one of the above lenses, and a ring of brass keeps the lens in its place. The tube is  $2\frac{1}{2}$  ins. long, and the cells screw in till there is only two inches between the inner surfaces of the lenses. The diaphragm slot is just midway. Now according to the well-known rule, multiply the foci of the two combinations together, and divide by the sum obtained by adding them together and subtracting the distance of separation, it is



quite possible to reckon out any focus we like. Let us take, for instance, the 22 and 18 in. lenses— $22 \times 18 \div [(22 + 18) - 2] = 396 \div 38 = 10\frac{1}{2}$  focal length. Now the full aperture of our lens is  $1\frac{1}{8}$ , therefore we get a focal length of  $10\frac{1}{2}$  ins. and a ratio aperture of  $f/6.5$ , at which there is sufficient outstanding spherical aberration to give us softness. Or we may use the 18 and 16 ins. lenses, and then we get  $18 \times 16 \div [(18 + 16) - 2] = 288 \div 32 = 9$ , and the aperture will then be  $f/4.8$ , and we must, or may, stop down with advantage; or, if we take the two extremes, we get  $22 \times 8 \div [(22 + 8) - 2] = 176 \div 28 = 6.3$ , and we get an aperture of  $f/3.9$ , which requires a good deal of stopping down. This arrangement is not optically and scientifically perfect, but at any rate it will just do what we want it to, and we have a very convenient and efficient combination lens with which we can obtain any focal length, and consequently any sized image, so that we can actually work our lens at any aperture we like without having to get too near the sitter, and thus decrease the ratio aperture.

The next point to consider is the camera and tripod. This may be the ordinary one we are always in the habit of using; but if we want to avoid any outcry we had better shoe the tripod points with bits of cork to prevent damage to carpets, etc. A swing-back is extremely convenient here. No other point in the camera or its appurtenances requires notice.

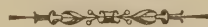
The next important consideration is the plate. This is always a burning question, and our advice is to use as sensitive a plate as you can get hold of, isochromatic, orthochromatic, or colour sensitive, commercial or home prepared, in preference, because there is less work for re-touching; freckles, and sallow skins, and yellowish lighting have, therefore, less influence. We prefer personally a bromo-iodide plate, and always give as long an exposure as we possibly can without allowing the sitter to obviously move, and for this reason keep our eye on the sitter, and have the lens cap ready to clap on the instant we note a tremor. The developer we use is eikonogen with hydroquinone, but at present we have only considered the necessary appliances, and consequently the development takes a later place.

### ENGLISH v. GERMAN PLATES.

WE are so accustomed now to see things of all kinds branded with the words "made in Germany," that one sometimes wonders whether anything is ever made in England, except, perhaps, a few political fiascos and verbose speeches in the House of Commons, so that it is really refreshing to find a very high compliment paid to the makers of English dry plates by photographers abroad. In the *Photographische Mittheilungen* for April 1st there is an extract from a letter from a German doctor to a professor in Berlin, which we translate for the benefit of our readers: "I have been in Colombo, Madras, Hyderabad, Puna. Above all also here, I have met with German photographers, who permitted me, in the most friendly manner, to use their dark-rooms, without anywhere being willing to take any remuneration for the same. It was sufficient that I represented myself as a German amateur. Where I desired it, the developer even was placed at my service gratis. At the most I ought to give a gratuity to the assistant where there was one. The gentlemen were . . . all Germans—well-disposed Germans—working exclusively with English plates. All declared that they would rather obtain their plates from Germany, if the German plates were anything like equal to the English. Not one of these gentlemen uses ice; some work even without an alum bath, even in the hot season (most with the pyrogallol developer). The English plates stand such treatment, keep their sensitiveness, probably for years, at any rate more than one year. German plates give

foggy pictures even after a few months, become always more insensitive and worse. All require an alum bath, and will not even then stand in the hot, rainy season long washing." Dr. Vogel, in an editorial note, says, "We know that English plate makers add chrome alum, before coating, to the emulsion destined for India, in order to harden it. We know further that they in England send premeditatedly there less sensitive plates; further, that they always recommend the pyro developer, because this somewhat hardens the plates."

Although we have a very great respect for the opinion of such an authority as Professor Dr. H. W. Vogel, we think that in this case he has spoken without serious consideration and with the bias of a defending counsel. It has been our experience to forward numerous lots of plates of several different makers to friends in India, and the only precaution taken by the makers is to see that the plates were properly packed in zinc-lined cases. Not content with this, however, we communicated with two of the largest manufacturers of English plates, and their replies in both cases bear out the result of our experience. That our English makers specially coat plates for India is absurd on the face of it, as some makers actually receive an order which has to be immediately packed and dispatched to the docks in order to catch a certain steamer. That they send out there plates of lower sensitiveness we know to be untrue from several communications from our correspondents. Further, that the pyro developer is recommended because it has a tendency to harden the film is equally absurd, as pyro has been the developer recommended almost from the very first introduction of gelatine dry-plates.



**"Sans Egal" Paper.**—We have recently received from the London Sensitised Paper Co., of 46, Lawford Road, Camden Town, N.W., a sample of their sensitised albumenised paper, which they guarantee was sensitised five months before it was sent to us. That being so, all we can say is that it keeps remarkably well, for on putting it in the printing frame we found that it printed very rapidly, and toned with ease in the ordinary toning bath, and was in no way deteriorated by having been kept. It is well worth trial.

**St. Petersburg Photographic Exhibition.**—The *Daily News* says:—Though the photographic exhibition is confined to the Russian Empire, the best exhibits, writes our correspondent, are of English goods. This is notably the case with cameras and apparatus. One interesting exhibit is a large series of views taken by the brothers Groum Greshemailo in their recent journey in the Thian Shan and in Chinese Turkestan, and alongside is the camera by which they were taken, and it is of London manufacture. As for the views, enlargements, transparencies, they are fully up to the standard of such exhibits in England, but they show what a great field there is in the Russian empire for the photographer.

**Reproduction.**—As many of our readers are interested in the reproduction of photographs, we cut the following list from the *Lithographic Art Journal*:—

Tissierography.	Heliotype.	Albortype.
Zincography.	Heliocromotype.	Typochrome.
Paniconography (or	Helioglypty.	Collotype.
gillottage, after the	Phototype.	Autotype.
name of its inventor,	Hélioplanography.	Diaphanotype.
Gillot).	Photoglyptie.	Chrysogyp.
Photogravure.	Phototypography.	Gelatinography.
Photozincography.	Photochrome.	Téténotype.
Heliogravure.	Pantotype.	Lencography.
Heligraphy.	Woodburytype.	Chaotype, &c.
	Panotype.	

**A New Focussing Cloth.**—There has always been room for improvement in the focussing cloth, and Mr. T. Manson, of 37, Highgate, Kendal, has certainly invented one of an entirely novel form. This he calls the "Sensible." It is bag-shaped, and covers the camera completely, with the exception of the lens, and a space left in the underside for the tripod screw. The mouth of the bag is, of course, open, and is large enough to admit the head and one arm to rack out the camera. Being well made and of black twill, it is quite impervious to light. It is the most perfect focussing cloth that could be conceived, and we are quite sure that, at 3s. each (half-plate size), Mr. Manson will have an enormous sale. The cloth is a protection to the camera and to the dark slides, and when travelling, the whole can be packed in it and so protect both.



## Letters to the Editor.

### PHOTOGRAPHY IN NATURAL COLOURS.

SIR,—Surely Mr. Lacy is more than “a little hypercritical” when he asks whether an image produced by the action of light is photography. I take it that the meaning of the word photography is “delineation (roughly speaking, drawing, painting, picture taking) by means of the chemical action of light upon certain substances” (Latham’s English Dictionary). Surely the very roots of the word should tell Mr. Lacy what photography is, viz.,  $\phi\omega\varsigma$ , gen;  $\phi\omega\tau\acute{\iota}\varsigma$ , light; and  $\gamma\rho\acute{\alpha}\phi\omega$ , I write. The first use of the word is ascribed to Joseph Nicéphore Niepce, according to Schiendl’s “Geschichte der Photographie,” p. 29, for he says that Nicéphore, in a letter to his brother Claude on May 9, 1816, states that he had used the lens of a microscope, and that he had made the discovery “es sei nicht unbedingt nöthig, dass die Sonne hell scheine, um Gegenstände im Freien aufnehmen zu können, man könnte daher den Namen *Heliographie in Photographie umändern*.” Probably I am “very much at sea as to the meaning of philosophical terms” if the meaning is that as evinced in the letters of Mr. Lacy; but may I ask him whether he is aware that a controversy has raged ever since the first formal use of the terms “noumenon” and “phenomenon” by Anaxagoras, as to whether we cannot perceive more than phenomena? I may be equally as well acquainted with Hegel as Mr. Lacy, as, some years ago he, with others of his school, formed a favourite subject of study with me.

I do not see that there is any benefit to be obtained by continuing this discussion, as I hold, and shall still hold, that photography is the action of light upon certain substances utilised in the production of pictures and reproduction of objects, and further that it is possible by the aid of photography to produce the phenomena of colours, as has been done by M. Lippmann; and as Mr. Lacy will admit neither *fact*, I do not see any advantage in discussing the question further.

I fail to see, further, why a dogmatic statement of a celebrated *physiologist* should be weighty evidence. An eminent *physicist* might prove that a certain effect was impossible, and on being shown this said effect would either have to acknowledge himself wrong, or else say, “It may be a fact, but all the same it is theoretically impossible.” Such authorities as Jannssen, Vogel, Becquerel, and even Captain Abney have had to admit that Lippmann has produced the colours of the spectrum; why then should the bald statement of Professor du Bois-Reymond be “weighty evidence”? <sup>p</sup>

I quite agree with Lient.-Col. Verney that it is impossible to state positively that photographs will never be taken in natural colours. Every year we are making greater and greater advances in photography, as in every other science, and the man will be more than bold who will say, “Thus far canst thou go and no further,” either in photography, electricity, or chemistry.—Yours truly,

FARBENLEHRE.

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### THE EXPLOSION OF A GAS REGULATOR.

#### APPOINTMENT OF A COMMITTEE PROPOSED.

SIR,—The letter from your correspondent, Mr. Brandreth, containing an account of the above accident, will, no doubt, cause a certain amount of uneasiness to those who, like myself, are in the habit of using compressed gas. About two years ago I purchased a regulator of a pattern similar to that shown in your illustration for the use of the West London Photographic Society, which has been in constant use both by Mr. Horton, our lanternist, and myself ever since, and in both his hands and mine it has always worked well. I certainly think the subject is one which should receive careful investigation at the hands of experienced men, and I would suggest that, if possible, a committee of such should be appointed. Although I am willing to admit the great convenience of the compressed gas system, yet I confess to feeling much more at ease when using gases.

In regard to the cause of the explosion, I do not think, if you will permit me to say so, the theory suggested in your leader that it was due to the powerful compression of atmospheric air containing carbonaceous matter, etc., can be the correct one, because, owing to the construction of this form of regulator, the quantity of air contained in it before the admission of gas from the cylinder would be practically *nil*. My own opinion is (I admit it is very much a matter of conjecture) that by some mischance the valve

or passages of the regulator became blocked with foreign matter of some kind (possibly a fragment of metal), and that when the gas was turned on the obstructive substance was propelled with great force through the valve of the regulator, the friction so caused generating a sufficient amount of heat to effect the ignition of the inflammable portion of the bellows, the combustion, of course, being powerfully supported by the flow of oxygen from the bottle.

I certainly think, Sir, when we bear in mind the nature of the apparatus used in the production of the limelight by the compressed gas system, and the terrible results which may accrue from the unskilful or careless use of the same, that every possible means should be taken to ensure, as far as possible, the safety of those who use it, and those who profit by its use, and such an investigation as that which I have suggested will, I think, tend to that end.—Yours truly,

JOHN A. HODGES.

87, Chancery Lane, W.C., April 11th, 1891.

SIR,—The account given by Mr. Brandreth in your last issue about the explosion of the governor of his oxygen bottle is most incomprehensible. I have used compressed gases now for some few years past in lantern work, and I cannot but think that, confused by the accident, he has made some mistake as to what he had done before. First, oxygen of itself is altogether incapable of explosion (as is hydrogen also), and, therefore, it is quite certain that it was not pure oxygen that exploded. Then I do not believe that turning the valve of the bottle on and off a hundred times would have ignited gas, mixed or pure. There must have been a light somewhere. He had probably turned on the valve at the hydrogen bottle first, as he ought to have done, before turning on the valve at the oxygen bottle.

But if he had not seen that the jet valves were closed, as they ought to have been, the hydrogen could easily have found its way into the oxygen regulator, especially as he says there was some leakage there to begin with.

Then, when he tried to light the hydrogen gas in the lantern (or else he had it alight before), the mixed gas that was in the tube and the governor exploded with the result related. Of this we may be perfectly certain: (a) that no explosion could have taken place without the presence of mixed gases; and (b) that no explosion of even mixed gases could have occurred without a light. Hence there must have been mixed gas in the governor, and a light must have been applied or alight in the lantern.

The jet valves or cocks should always be turned off before the bottle valves are turned slowly on; then the hydrogen should be lighted in both (or three) lanterns, and after that the oxygen jet valves should be adjusted, one after the other.

When a lantern, too, is turned out for the night, or for a pause, the gases should be turned off at the bottles, and the gases should be allowed to burn themselves out, then you get no pressure left in the tubes, and the gases will not be mixed in them. But if either of the jet valves is turned on when the bottle valves are turned on, you are very likely to get mixed gases in the opposite tube, and this renders you liable to have the tube blown off and perhaps the governor exploded.

Personally I feel convinced that Mr. Brandreth was so astonished and confused at the accident, that he does not properly remember what he did to produce it.—Yours truly,

April 10th, 1891.

WERNER H. E. SOAMES.

SIR,—Being a frequent user of regulators for controlling gas at high pressures, I am naturally much interested in matters relating to their safety, and reading, in the current number of the AMATEUR PHOTOGRAPHER an account of the explosion of Mr. Brandreth’s regulator, gladly availed myself of your permission to examine the remains.

The triangular rubber bellows regulator, in my practice, has always worked very smoothly, leaving nothing better to be desired, but it has the drawback of being readily accessible to accidental damage, and my first opinion as to the cause of explosion was that what Mr. Brandreth thought a leakage at the coupling was really a leak in the rubber bellows, and that a glowing splint of wood, applied for the purpose of testing soundness, caused the accident; an examination of the regulator quickly dispelled the idea, and I apologise to Mr. Brandreth for suggesting it.

From all appearances, the ignition took place directly under the valve of regulator, above the cylinder valve, and your theory, Sir, that the compression of gas between the two valves caused



sufficient heat to ignite an oxidisable substance present, is probably correct. It hardly explains, however, the *explosion* in the bag, unless we suppose that the heated rubber gave off a vapour which formed an explosive mixture with oxygen, but there hardly appears to have been time for this, and we are faced with the difficulty that the explosion is reported to have occurred first.

Mr. Brandreth does not tell us whether the regulator had been previously used for hydrogen; if it had, the explanation would perhaps be simple. I do not think, Sir, your suggestion that the pressure accumulated between the valves from repeated turning on and off would have taken effect in this case, the leaky coupling preventing it.

The ignition of a few particles of *metal*, although sufficient to explode mixed gases, would hardly of itself be able to start rapid combustion in a large mass of brass, and so one cannot help thinking that some hydro-carbon such as grease must also have been present.

It is to be hoped that the matter will be thoroughly dealt with, and means taken to prevent such accidents, seldom though they fortunately are.

Anyone after seeing the wrecked regulator must admire the presence of mind of Mr. Brandreth; it must have taken considerable nerve to have so promptly turned off the pressure.—Yours etc.,

RICHARD HORTON (Hon. Lanternist, W. L. P. S.)

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#### GELATINE SLIDES FOR THE MAGIC-LANTERN.

SIR,—Permit me to draw your attention to a substitute for glass in lantern slides, and one which is capable of adaptation to the various processes for photo-mechanical printing.

The gelatine slides, a specimen of which I enclose, are clear; show well with lime-light or oil lantern; will stand the heat, having been fully tested by a number of lanternists here; are unbreakable, and light for transit by parcel post.

They may be printed upon from type in an ordinary press—hymns, etc.—or from engraved blocks, or the lithographic stone.

They are noticed in *Help* (Review of Reviews office, 1d.) for March.

They are particularly suited to the various processes of photo-mechanical printing, and thus are likely to revolutionise the slide trade, as they can be turned out by the dozen at a cheap rate. The clear gelatine sheets, slide size, are sold by Messrs. W. Strain and Sons, Great Victoria Street, Belfast, at one shilling per dozen, and they also supply a neat cardboard mount, which serves as a carrier, at eightpence per dozen.

For sketches, diagrams, statistics, and other illustrations needed in a hurry, they will prove invaluable.

I have no intention of securing a patent, but desire to see a more general use of the lantern for recreative, educational, and mission purposes, which is sadly retarded at present by the costliness of slides.

I shall be glad to forward a sample, printed from type or block, to any of your lanternist readers who may be interested, and who care to send three stamps to cover cost.—Yours faithfully,

J. A. NOBLE.

Y.M.C.A., 13, South Parade, Leeds.

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#### A LOST WATER WAY.

SIR,—Under the title of "Where to Go," "A. R.," a week or two ago, describes a most interesting water trip through England, embracing the Severn and the Wye. One of the links in the chain of water communication which rendered this trip possible, viz., the Hereford and Gloucester Canal, is now demolished, a railway usurping its bed in many parts. It is about ten years ago that I, with a companion, travelling in canoes, traversed this route with a camera. Probably we were the last, on pleasure bent, to do so, for a month or two later its filling up was commenced. I think it well to issue this warning, as the canal will be marked on the maps for a long time yet.—Yours truly,

Hereford, April 13th.

ALFRED WATKINS.

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#### THE FRENCH DEVELOPER, CRISTALLOS.

SIR,—I am surprised to find none of your readers seem acquainted with the French developer, Cristallos. It is as rapid as pyro, and first-class for instantaneous and film development. It also works well with bromide paper. I have developed time exposures with it very successfully, and by restraining with bromide and a proper amount of water there is not much fear of

fogging the plate. I sometimes use it as an accelerator for hydro-quinone with an under-exposed plate. Develop as far as you can go with hydro; wash it off, and pour on a not too strong solution of Cristallos, and the detail will come up in a marvellous manner. It is the cleanest possible developer, never staining fingers, cups, or dishes. I buy it ready made up and diluted, but it can be bought in boxes containing the ingredients and mixed at home.—Yours truly,

ETHELRED DILLON.

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#### CELLULOID TO FOCUS ON.

SIR,—It was with much pleasure I read in the AMATEUR PHOTOGRAPHER of the 10th inst. that Col. Verney is trying a celluloid film in place of the ground-glass, as I have used it in both half and quarter plate size for about two years, and I shall be pleased to hear Col. Verney's report on his experiment. I have shown mine to three or four camera makers, and they all thought it good, but it is almost impossible to get manufacturers out of the old groove.—Yours truly,

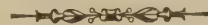
EDWARD BARNES

(Late Capt., 27th Inniskillings).

SIR,—I read in your issue of to-day a note on "Celluloid Sheets to Focus On." As it may be supposed to be a novelty, I may say that I have manufactured several cameras with celluloid focussing screens, with the result so far of securing a success. I have at present a whole-plate camera in stock with such a screen.—Yours truly,

J. R. GORTZ.

19, Buckingham Street, Strand, April 10th, 1891.



#### RULES FOR THE CONVERSION OF ENGLISH WEIGHTS AND MEASURES INTO THE METRIC SYSTEM.

To CONVERT either

Grains per 20 fluid ounces to grammes per 500 c.c.,

or " 10 " " " " 250 "

or " 1 " " " " 25 "

multiply the grains by 0.057 in each case.

To convert

Grains per fluid ounce to grammes per 1,000 c.c., multiply by 2.29

" " " " " 500 c.c., " by 1.14

" " " " " 100 c.c., " by 0.229.

Examples:—

Quinol... 40 grains  $\times 0.057 = 2.28 = 2.3$  grammes

Potassium bromide... 20 "  $\times 0.057 = 1.14 = 1.15$  "

Ammonium carbonate 480 "  $\times 0.057 = 6.84 = 6.9$  "

Water... 20 oz. 500 c.c.

Or,

Pyrogallol... 2 grains  $\times 2.29 = 4.58 = 4.6$  grammes.

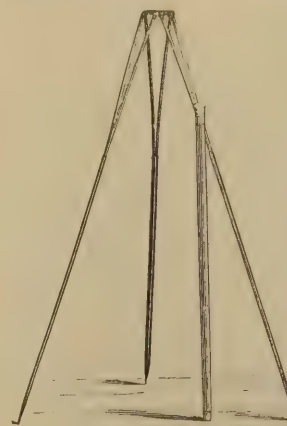
Sodium sulphite... 8 "  $\times 2.29 = 18.32 = 18.3$  "

Bromide... 1 "  $\times 2.29 = 2.29 = 2.3$  "

Water... 1 oz. 1,000 c.c.



**Walking Stick and Tripod.**—Mr. J. M. Turnbull, of Rose Street, Edinburgh, has sent us for inspection a very well made and handy walking-stick tripod, which is as rigid as could possibly be expected, having regard to its extreme lightness and portability. The illustration



shows the form of tripod, and the following is Mr. Turnbull's description:—"The tripod itself is made of a specially drawn thin and hard telescope tube, of a section of one-third of circle, so that when the three tubes forming the tripod are placed together they form a circle. Inside each of these three tubes are two tubes of a section of one-sixth of a circle. These draw out of the outer tubes to double their length, and form a complete sliding tripod of the usual height. When not in use, the three legs of the tripod are placed together, and form a circle about three-quarters of an inch in diameter; these in turn are placed inside the walking-stick case, which is made in a special and entirely novel manner, of special thin steel and wood. When the tripod is inside, the cane can be carried and used as an ordinary walking stick, and is little heavier." The price is 22s. The tripod is, of course, most suitable for small cameras.



## Studies in Art for Photographers.

BY REV. F. C. LAMBERT, M.A.

### CHAPTER VI.

#### CONTINUITY AND CURVATURE.

By the law or principle of *continuity* is meant the very opposite to anything bordering on disconnection. It also includes the idea of general order or plan, and so conduces

to unity. Everyone is conscious of an indescribable pleasure experienced in such bodily motion as in that of skating, swimming, and the like; while dancing has been called the poetry of motion. Without stopping at this point to discuss the probable basis for this pleasant sensation, it is enough for present purposes to say that it is just as pleasant and satisfactory as the jolting motion of a "bone shaker," or broken-sprung "four-wheeler" is unpleasant.

Let it be clearly understood that by continuity we do not mean simply monotonous repetition; but, on the contrary, a gradual transition, or, as it might be expressed, *continuity with variety*, not

so sudden as to produce *shock* but sufficiently varied to keep up interest, or even at times bordering on pleasant surprise.

In this as in all other matters, our foundation must be laid in the record of natural fact. Turn for a moment to the sea, and plan out in your mind the chief lines of the

wave crests—you cannot fail to observe a continuity of parts, sometimes tending towards symmetry, sometimes towards a radiate distribution of lines, sometimes as one great and leading line with all surrounding others in marked subordination; or it even may at times appear

to all but the closely obser-

vant as distinctly monotonous repetition. We may transfer our attention to the distribution of sand dunes or waves, or to cloud waves, or to the open panorama of hill and dale. We may follow out this principle in the receding pillars and arches of the cathedral, as they

gather themselves closer and closer together in the perspective distance.

We may subdivide the thought, and apply it to *lines*—noting the contours of very nearly all natural objects. True that the world of crystals is a world of straight lines and plane surfaces, but for the rest of the natural world before our eyes, nature works in curved lines of gentle continuity, in the leaves, flowers, stems, etc., of the vegetable world, and also in the forms of very nearly all animals.

We may apply the thought to *light and shade*, noting how one melts into the other through a thousand subtle steps for those who have eyes to see. Look at the continuity of line, and also of light and shade in cloudland alone. We may apply it also to the *planes* as they melt one into the other in the growing distance, and in that way contributing to our notion of space.

We may apply it to the component parts of the *subject*, the arches upon which we are building the sentiment, the story, the *raison d'être* of the picture, so that each part shall be a necessary and duly disposed part; just as in a properly orchestrated composition, each instrument is a support to and in good tune and harmony with all the others, each and all contributing to the exposition of the theme.

From the idea of continuity we may very naturally pass to that of *curvature*. It is a matter of common observation that any curve—even the circumference of a circle—is more pleasing to the eye than a straight line, and hence where we have parts of two or more circles in continuity, the total effect is more pleasant than two or more straight lines meeting each other.

A momentary glance at fig. 10 will make this point clear.

In the curve *a* we have parts of three different-sized circles in continuity, and going in the same direction (*i.e.*, the line joining the centres of two contiguous arcs, does not meet at the juncture until produced). The eye follows with placid interest the curve from *a* to *b*, when a variety is introduced (by a difference of radius) at the point *b*; this is continued up to *c*, where another change takes place. Compare this with the three straight lines *mn*, *np*, *pq*. At the point *n*, the monotony of the straight line *mn* is suddenly replaced by an unexpected change of direction along *np*, and similarly along *pq*, so that *n* and *p* are points of surprise rather than agreeable interest.

Consider fig. 11. Here we have a curve made up of two arcs of circles in opposite directions (*i.e.*, the line joining their centres passes through the point of contiguity). We see at a glance that the eye receives a pleasanter impression

when following the curve *a b d* than when following the broken lines *mn*, *np*, *pq*, *qr*, although the general path in

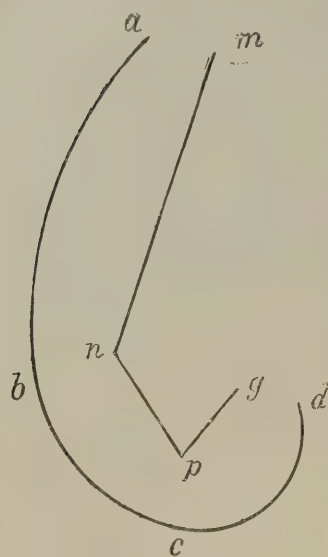


FIG. 10.

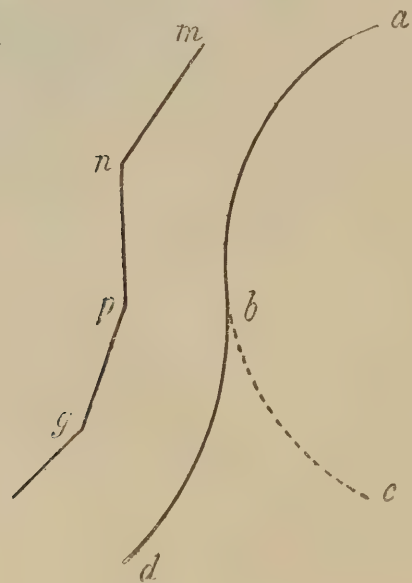


FIG. 11.

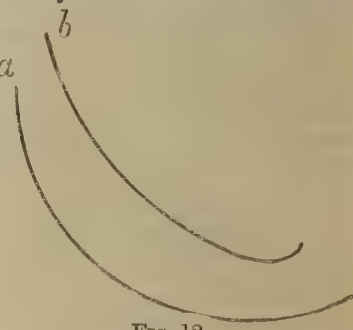


FIG. 12.

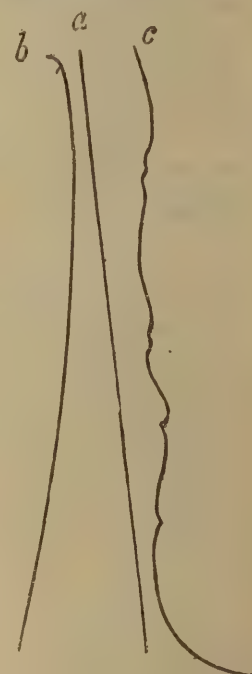


FIG. 13.



both cases is approximately the same. It may be as well here to notice a physiological matter. The eye in following the circular arc from *a* to *b* has had time to acquire a certain degree of muscular co-ordination, and the tendency is to continue in the same monotonous curve along the dotted line *bc*, but at *b* the variety is introduced—the part along *bd* soon becomes monotonous. If now, at *d*, we imagined the part *ab* to be repeated and so on, although there would in this way be built up a continuous curve with points of variation, and therefore of interest at intervals, yet the eye would very quickly acquire the power of anticipating the recurrence of these points at regular intervals, and so very soon the evenly wavy curve would become (as we know it to be from experience) distinctly monotonous.

Thus while nature shows us continuity and curvature as great laws of growth and form, it is to be observed that the curvature is *very* seldom monotonous. The outline of any leaf or feather will show this at once, and also illustrate the great charm of this modulation of curvature, all the more when it is applied to what we might unobservantly think was rigid symmetry; note this especially in the contour of feathers. The most uncultured eye will see at once that the curve *b* (fig. 12) is much more interesting than *a*, which is the monotonous arc of a circle. The careless observer may be disposed to say that the upper part of *b* is straight, and it is only towards the hook end that there is a curvature. Let him hold the paper up to the eye and look along it, and so dispel that idea at once.

Finally, the hasty reader may be disposed to jump to the conclusion that the above is simply a plea for having everything in a picture bounded by curved lines. This inference is entirely unwarranted. For, on the contrary, I hasten to say that a picture all curves more often than not conveys the feeling of weakness, instability, and even monotonous, whereas a few straight lines judiciously introduced gives firmness, solidity, and even adds a refinement to the more subtle parts of the neighbouring curves. This latter point may be seen in fig. 13, where we have *a*, a straight line, and *b* a gently modulating curve. The straight line is an undoubted assistance in appreciating the curvature of *b*. This is even more evident in the case of *c*, a curve made up of numerous minor curves. This we see in nature, where we unconsciously avail ourselves of the horizon line wherever visible when endeavouring to analyse the more subtle curvature of the waves. In landscape, too, here and there a freshly exposed cleavage plane of rock is of great assistance in feeling the finer curves of more denuded parts. The mast is of the utmost importance in perceiving the finer subtleties of the belly of the sail, or the catenary of suspended ropes, chains, nets, etc. But here, as in all other matters of fine art, it is not so much the existence of this, or presence of that, which makes it a work of fine art, but just that one perfect and correct admixture of this and that in due proportion, that enables it to yield the maximum of refined pleasure with the minimum of fatigue.

(To be continued.)

The Astronomical Congress met on the 31st ult. at the Paris Observatory, which was ornamented for the occasion with French and foreign flags. The chief object of the Congress is to enable the various members representing distant observatories to exchange their views with regard to work that has been done in preparing a photographic map of the heavens. The celestial space has been broken up into a great number of parts, which are distributed among the various countries. From 4,000 to 5,000 plates have already been obtained, and will be carefully examined during the sittings, which will last to the end of the week. Admiral Mouchez took the chair. There were twenty-six members present, representing France, Italy, England, Russia, Holland, Chili, Germany, the Cape of Good Hope, and the Vatican. The English delegates were Messrs. Abney, Knoben, and Plummers.

## Instantaneous Photography.

BY W. JEROME HARRISON, F.G.S.

### CHAPTER XIV.

#### LENSES AND LIGHT.

ALTHOUGH it is quite possible to photograph a perfectly black kettle in a perfectly dark room, yet it need scarcely be said that plenty of light, and of the right quality, is practically essential for success in *instantaneous* photography.

*White Light not Pure.*—We have used the expression “light of the right quality.” Probably every reader of this article will be acquainted with the composite nature of white light. A beam of sunlight is composed of an infinite number of colours—which are displayed in the rainbow, or when a sunbeam is caused to pass through a prism—but of these we usually recognise seven only, viz., red, orange, yellow, green, blue, indigo, and violet. There are also invisible (heat) rays which lie beyond the red, and other invisible (actinic, or chemically acting) rays which extend beyond the violet.

The important fact to the photographer about these differently coloured rays is that only the blue, the violet, and the ultra-violet have any practical effect upon ordinary gelatine-bromide plates, during the rapid exposures necessary in instantaneous photography. With isochromatic plates, the green and the yellow rays also produce some effect; though even in their case the blue and the violet rays act more powerfully.

*Optical and Chemical Effects of Light.*—Now, the effect of the variously coloured rays upon our eyes is very different to their effect upon our plates. Yellow is the most luminous, or makes objects which reflect it seem the brightest. The comparative effect upon the eye and upon an ordinary dry-plate is shown in the following table, where the maximum effect is represented by the number 1,000:—

Colours.	Luminous Intensities.	Chemical Intensities (upon ordinary Silver Bromide).
Dark red ..	Just perceptible ..	0
Red ..	32 ..	5
Bright red ..	94 ..	10
Orange ..	640 ..	50
Yellow ..	1,000 ..	100
Green ..	480 ..	200
Blue ..	170 ..	500
Indigo ..	31 ..	1,000
Violet ..	6 ..	650
Ultra-Violet ..	0 ..	450

Thus the effect of yellow light upon the eye is ten times greater than it is upon the dry-plate; while the effect of indigo light upon the plate is thirty-two times greater than it is upon the eye.

*Use of Exposure Tables and Meters.*—The table just given causes one to doubt the recommendation so often heard from the “old hands,”—“Cast exposure-rules away; and rely upon the appearance of the image as seen upon the ground-glass.” Now, as the rays which (mainly) cause the visibility and brightness of the ground-glass image are *not* those which are principally instrumental in producing the invisible or “latent” image upon the dry-plate, and as it is impossible (by sight only) to judge the correct relationship between them, it would appear that exposure meters or tables based upon correct and scientific principles may, and ought to be, of great service, especially to the beginner or to those who, like many amateurs, practice photography only at irregular intervals and for brief periods of time.



But the "old hand" may proudly reply, "Yet I carry no 'tables,' no 'meters,' and my exposures are generally correct!" Well, this reminds one of a great (and candid) oculist who, when congratulated upon the success of a difficult operation, replied, "Ah; but I spoiled a hatful of eyes learning how to do it!" And in gaining the experience which enables him *now* to expose correctly, the "old hand" has probably paid no small tribute to the plate-makers. But even in such cases it is probable that it is the general impression produced by the scene upon the practised eye, together with memories of time of day, time of year, etc., as compared with successful exposures on former occasions, which influence those who dispense with "tables," more than the seeming brightness of the image upon the ground-glass. There are, indeed, certain states of the air when the atmosphere appears quite luminous with yellow light, and when the focussing-screen image shows no diminution in brightness, yet when exposures have had to be lengthened ten or twenty times. There are now at least two excellent exposure meters upon the market—Watkins' and Hurter and Driffield's. We have used both of these for the same purpose, and in the same way, as a calculator uses a slide-rule, viz., to render more certain, more easy, and more correct one's results. If we were in the habit of doing landscape or general out-of-door work *all day and every day*, we might possibly dispense with such aids; but as it is, we feel grateful to those who have placed such convenient instruments at our service. There are, besides, many books of "exposure tables" which will render good service. No doubt the man of long experience and constant practice finds his memory to act as the best "exposure meter" of all; but to the great body of "lovers of photography" we are convinced that such aids are useful.

In connection with instantaneous photography many a plate will be saved, and much time and trouble also, if the following rule is borne in mind: *When meter, or table, or experience shows that an exposure of more than one-tenth of a second is necessary with stop f/8, LET THE SUBJECT ALONE—DON'T ATTEMPT IT.* Of course, this rule wants applying with discretion, and under circumstances which we shall explain when treating of exposures; but in the meantime it may be taken as a pretty fair stand-by.

**USE OF LENSES.**—A lens is a contrivance for concentrating the rays of light. The pupil of the eye is only one fifth of an inch in diameter; but when the astronomer at Mount Hamilton places this narrow optic opening at the focus of the great Lick telescope, his pupil is expanded, virtually, to a diameter of three feet, that being the breadth of the magnificent object glass which peers heavenward at the other end of the sixty-foot tube.

It is, as we well know, quite possible to dispense altogether with a lens in photography, and to use simply a pin-hole, through which the rays of light enter to form an image upon the plate. But our exposures must then be very prolonged, from ten minutes to an hour; and to employ pinholes in place of lenses for instantaneous photography would require plates six thousand times more sensitive than those which are now at our service.



**Matt-Surface Obernetter Paper.**—We have recently had the pleasure of trying some of this paper as supplied by Mr. Gotz, of 19, Buckingham Street, Strand, and were very pleased with the results we secured. The paper prints very quickly, and is so sensitive, in fact, that it is unsafe to open it except in the dark-room. It can be toned by any of the ordinary processes, but the best results are certainly obtained by using the solution supplied by Mr. Gotz for the purpose. It is sold in concentrated form, in bottles sufficient to make 36 ozs. of toning solution. The range of tone procurable is great, ranging from soft warm greys to purple black, and we should imagine that the new paper will be largely used in the coming season on account of its many advantages.

## Our Contemporaries.

*Wilson's Photographic Magazine* gives the following "Process to Restore the Primitive Tone to a Deteriorated Print:—A silver print, rendered yellow by time, may very easily be brought back to its primitive tone by plunging it in a bath composed of—

Distilled water .. .. .	500 gram.
Saturated solution of bichloride of mercury in	
Chlorhydric acid .. .. .	8 to 10 drops.

The print should be removed as soon as it acquires a strong purple tone, and washed with the greatest care in several waters. Dry and mount. If a warmer tone is desired, tone afterward in a bath composed of—

Distilled water .. .. .	125 gram.
Chloride of gold and potassium .. .. .	1 "

This bath may be used until exhausted. For getting prints on silk make the following solution:—

Gum benzoin .. .. .	0.80 gram.
Gum mastic in tears .. .. .	0.50 "
Chloride of cadmium .. .. .	3 "
Alcohol .. .. .	100 c. c.

Filter, then immerse the silk, and afterward hang up to dry. Sensitize in a silver bath at twelve per cent., slightly acid. Again dry, and iron the silk before placing it against the negative. Toning and fixing are the same as for albumenised paper. Again iron after careful washing.

The *International Journal of Microscopy* says—"Mr. Nelson puts the limit of magnification for photo-micrography at 1,000. He has reached 1,500, and in special instances even 1,650, but he regards 1,000 as a useful limit. This can be obtained by an inch objective, with an eye-piece giving twenty times the initial power of the lens."

*Anthony's Photographic Bulletin*, speaking of "The Amateur as a Specialist," says:—"As a teacher in an English literature class said when asked to plan out a course of reading, 'If you are interested in anything, read about it, and one book will lead you to another.' So if one is interested in any particular subject, or has had some small modicum of success, let him follow it up on the same line. Time and money will both be saved if one concentrates, for a while at least, on a special branch, be it portraits, interiors, landscapes or animals. One kind of shutter, one make of lens, one brand of plate, one style of camera will usually suffice; and if by skill or luck one happens to make a great hit while working on one class of subjects, the temptation to return to indiscriminate view-taking will be lessened, while the desire to reach technical perfection will be stimulated by each successive effort in a single direction."

The *St. Louis and Canadian Photographer* gives the following printing process in India ink:—"Float the paper on

Water .. .. .	600 parts
Chloride of iron .. .. .	15 "
Citric acid .. .. .	15 "

Dry in a dark place, and print under a negative until a picture becomes visible. The print is now developed in a solution of gelatine containing India ink (or any other colouring matter). The coloured gelatine adheres in those places where the light has acted, more or less, and when fully developed, it is simply washed in cold water."

The *Lithographic Art Journal* gives the following method of transferring a photograph from chromate paper to zinc:—"Place the chromate paper containing the photo for ten minutes between two sheets of paper which have been saturated in a 1-5 solution of nitric acid in water. Upon the zinc plate place a piece of paper which had been previously soaked in nitric acid, and pull through the hand-press, which will cause a slight etching of the surface of the zinc-plate; the sheet of paper is taken off and all traces of nitrate of zinc are carefully removed from the zinc-plate by means of a blotter. The photo is then transferred upon the plate, gummed over, etc.; it is then rubbed in with ink, which has to be thinned with olive oil, and when all details appear sufficiently strong the plate is etched with a preparation made by adding a small quantity of phosphoric acid to a gum solution. When a drop of such a preparation placed upon a polished zinc plate discolours the same and affects its purity, then it is of sufficient strength."



## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

THERE is in Edinburgh a body which calls itself "The View-finders' Club." It is small, being limited to twenty-one members, and is not confined to photographers, though probably these are more numerous than any other class of members. The club gets its name from the fact that a subject is chosen, and every member who attends the succeeding monthly meeting is required to find a view illustrative of it. If they cannot find a view, they, of course, stay away, and this has the effect of limiting attendances. That the club has not been very successful is shown by the fact that the roll of members is not complete, and an effort is being made to fill it up. The idea is a fairly good one, were it not for the drawback that it does not work well in practice. The intention is to educate the members in art principles by criticism of their work. Now, that is a rather difficult thing to do. One is tempted to ask why so much energy is wasted in Edinburgh over small affairs like this, when the same amount, if concentrated, might be able to produce an institution of some merit, such as the projected Scottish Camera Club. Talent for such an undertaking is not a-wanting. All that is wanted is direction, and it is to be hoped, in the interests of photography, that this may be forthcoming soon.

A slight fire occurred on the premises of Mr. Wm. Hume, the maker of the "Cantilever" enlarging and other photographic apparatus, in Lothian Street, Edinburgh, on Wednesday morning. The outbreak was trifling, but it had been found on the previous day that a gas pipe in the premises was cut, as if by a sharp instrument, in several places. The police are endeavouring to discover if there was a malicious intention in this incident.

The other day in Prince's Street an excited crowd might have been seen round a cart which was standing in front of a photographer's premises. The photographer was clearing out his stock of superfluous negatives, and as they were tumbled into the cart the crowd helped themselves, not a few getting some choice specimens. The operation was surely being carelessly carried out, as it is scarcely fair to sitters that their negatives should afterwards be picked up on the streets.

Newspapers are gullible articles. A few days ago an Edinburgh daily paper announced with the air of one who has discovered something which is really important, that a prominent photographer in this city was about to introduce the practice of taking photographs by the flash-light, a method of photographing which would enable photographs to be taken at night. The writer had apparently never seen the late photographic exhibition in Edinburgh, in which there were several excellent flash-light photographs by Mr. Slingsby, of Lincoln.

Mr. A. S. Watson, a late assistant to Mr. Marshall Wane, photographer, George Street, Edinburgh, has acquired the business which has for a number of years been carried on by Mr. G. Shaw, at View Park, Bruntsfield Links, Edinburgh. Mr. Watson is an accomplished photographer.

Among the many uses to which photography is put, one of the most common is the representation of "facts" in connection with cases in the Law Courts. Recently a photograph came under my observation which I cannot help thinking was intended more to assist the side which produced it than to show the object as it really was. The subject was an architectural one. It was averred on the one side, and denied on the other, that a building was off the perpendicular, and the photograph was handed in to show that it was off. The portion so represented was, however, shown at the very margin of the view, where distortion might very easily have crept in, or might as easily have been produced by tilting the camera. This was not observed, however, the legal, quite as much as the general, mind apparently being still under the impression that in a photograph it is not true to say that "things are not what they seem," and the photograph was allowed to pass. When it comes to be known what can be done in a photograph one can imagine how such productions will be looked at askance by the gentlemen of the Bar, and what severe cross-examinations there will be of the artists, as to what description of lens they employed, whether they tilted the camera, and if so, whether they made use of the swing-back, etc. The first photographer who gets "jumped upon" in that way will open his eyes with astonishment. It is apparent that a little knowledge of photography would be a useful adjunct to both the bench and bar.

## Exhibitions.

### LIVERPOOL INTERNATIONAL PHOTOGRAPHERIES.

No. VI.

(By our Special Correspondent.)

As no doubt would be expected, both by those who have and those who have not visited the Liverpool Exhibition, the scene at the closing last Saturday was interesting and significant. There was an enormously crowded house, and the liveliest concern was manifested in the proceedings during the concluding hours. Everybody seemed to be in an anxious state of mind to "see the show all over again." Many did so, others could not for the crowd. Had it been possible to extend the season, the extension would have proved profitable at least for several more weeks. One of the most conspicuous circumstances in connection with the show was that it steadily grew in public favour from the opening night. The excellence of the exhibition in all departments conduced to this end. As a whole—and a very large and comprehensive whole—the exhibits have afforded delight to photographers and the general public alike. The series of superb lime-light demonstrations have drawn thousands of visitors, and the musical adjuncts have been light and pleasant seasoning to the more substantial fare. It is not too much to say that the enterprise and vigour of the Executive would have commanded success under much less favourable conditions; as it is, these gentlemen have made what was comparatively a foregone success into a lasting triumph.

#### HINTS FROM A RETROSPECT.

Looking back on the exhibition, some valuable hints may be picked up. It was, indeed, by benefiting by their own experiences in 1883, and those of promoters of subsequent shows, that the executive of the Liverpool International 1891 Photographeries were enabled to do so much and so well. First, they entered upon the project unanimously and energetically; then they carefully and anxiously considered and determined upon the schedule of conditions, striking out several new and original lines in the matters of classes and prizes. These are well-known now in the world of photography, and need not be further dilated upon. A large number of medals, between thirty and forty, were offered to competitors in all departments of the photographic art, beginners not being forgotten. Having thus got the preliminaries arranged, schedules of conditions, application forms, and the other necessary documents were printed in three languages—English, French, and German—and despatched to societies scattered pretty nearly all over the world, advertisements at the same time appearing in all the prominent photographic journals. This was many months ago. The response was beyond all expectation; exhibits came from far and near. Encouraged by their success up to this stage the exhibition executive moved faster and further at home, one of their first steps being to secure two more rooms at the Walker Art Gallery for the reception and hanging of the pictures. They left no stone unturned to command support. Not a detail was forgotten, or, once thought of, hurried over. Everything was given a due amount of consideration and discussion. The hanging and arrangement of the exhibits was, consequently, begun under favourable conditions, and being conscientiously carried out, the opening arrived with the whole exhibition in readiness. The subsequent progress of the show has been detailed week by week in the AMATEUR PHOTOGRAPHER, so that little further need be said on this head. About the smallest attendance on any one day was a few figures under 1,000; the largest attendance reached was on Saturday last, when 2,530 people passed through the turnstiles, the shillings taken totting up to nearly £100. In all 53,000 or 54,000 persons have visited the exhibition during the run. Up to the time of writing the exact figures have not been made out, but a very substantial balance to the Liverpool Association, under the auspices of which society the show was promoted, is assured. This is the more praiseworthy when it is taken into consideration that the advertising and other expenses of the scheme have been on a lavish scale. In addition to handsomely repaying the promoters, the exhibition has been made entertaining—one of the very best features from the public point of view, perhaps. The "rounds" of the exhibits have been enlivened by admirable selections of music ably given by prominent instrumentalists and vocalists; if the expense of these has been heavy, the outlay has, nevertheless, been money



well spent. There was not a dreary five minutes at the Walker Gallery from one end of the show to the other. I point these things out simply as a guide for promoters of photographic exhibitions in the future. Seldom, if ever, has a more enjoyable and instructive resort than the Liverpool International 1891 Photographeries been offered in "the dark spot on the Mersey." This is as it should be. The transactions of the British Association of 1854 record that Professor Phillips, speaking of the labours of Lord Rosse and Dr. Robinson—both of whom possessed the most perfected telescopes then in existence—in photographing the room, said:—"That nothing that they had to show in the shape of photographs of the room was at all to be compared with the results obtained by the voluntary efforts of the photographers of Liverpool." For the past thirty or forty years Liverpool photographers have done a very great deal for photography in general and their fellow townsmen in particular; the laymen of Liverpool have at last done something in return by supporting the now defunct International Photographeries as no similar exhibition was ever supported before.

#### THE FINAL RUSH.

During the last week there were enormous crowds, as already stated, and in no section of the exhibition were these more noticeable than at the lime-light demonstrations. Foremost among the lecturers who were called upon twice a night to give their demonstrations were Mr. Paul Lange—"Iceland," "Norway," "Scotland;" Mr. Lamond Howie, "Ober-Ammergau;" Mr. G. E. Thompson, and others. Almost without exception, the demonstrations have proved phenomenally successful, the lecture rooms in some instances, notably for "Iceland," "Norway," "Ober-Ammergau," "Northumbria," "Italy," "Florence," etc., being filled long before the time of commencing. In one or two cases people took their seats soon after six o'clock for lectures which commenced at eight. Towards the close four packed lecture rooms a night were the rule. Among the demonstrators, in addition to those named above, Mr. J. Pattison Gibson, Mr. Fred Clibborn, Mr. John Hargraves, Mr. S. G. Harrison-Dearle, Mr. Wm. Tomkinson, Mr. A. F. Stanistreet, Mr. T. S. Mayne, Mr. A. R. Dresser, Mr. Brownrigg, Mr. E. M. Tunstall, Mr. A. J. Cleaver, and Mr. Timmins should be mentioned. There are several others which I forget at the moment.

#### TWO MORE PRIZE WINNERS.

One of the classes of the exhibition, the "General Collection," in which two silver medals were given, has probably been somewhat overlooked by the great bulk of visitors. The pictures in this class were distributed over different parts of the show, and consequently were somewhat isolated. However, had they been kept together they would have made an unusually fine display—particularly several superb architectural interiors and exteriors, large size, sent from abroad. The two prize winners in the "Generals" are Mr. Charles Scolik, of Vienna, and Mr. H. S. Redfield. Both gentlemen show very fine work. Mr. Scolik, the editor of the leading amateur photographic journal in Germany, is a distinguished worker who has turned out many really excellent studies. One of his pictures entitled "The Happy Compromise," shown in the exhibition, is also reproduced (No. 12) in the official catalogue, and is a pronounced work of art. By the way, the later catalogues of the show are, I see, being bound in morocco, and are a souvenir of the big show which in future will be of some value.

#### FINALE.

The Ladies' Social, conversazione, dance, and distribution of prizes, arranged as the finale to the show, came off on Tuesday night in the City Hall, and were very successful. Many tickets were sold for the function; and the curtain could not have been rung down on the exhibition more happily. It now only remains to heartily congratulate the executive and the members of the Liverpool Amateur Photographic Association on their splendid success. The names of the executive are:—Chairman, Mr. Paul Lange; Hon. Secretary, Mr. T. S. Mayne; Hon. Treasurer, Mr. A. F. Stanistreet; Committee, Messrs. A. J. Cleaver, C. O. Ellison, P. H. Phillips, and W. Tomkinson. All these gentlemen have worked together with marked unanimity and enthusiasm.

#### NEW ENGLISH ART CLUB.

By LOITERER.

THE candid critic, departing from the Sixth Annual Exhibition of Modern Pictures, held by the New English Art Club, at the Dudley Gallery, can do no more than sigh. Genius disguised under veils of obtrusive crudity is to be seen on every wall of this exhibition, but genius nevertheless. Can anyone really admire Mr. E. A. Walton's expensive "Sisters" (3)? If so, we will lead such a person gently up to survey Nos. 9, 11, and 12. Mr. George Thomson's clever sketch of "Olympia as a Skating Rink" (4) deserves some praise, although its neighbour, "The Road to the New Forest," is a pleasanter theme. Mr. Theodore Roussel's "Brighton" (20) has been already reproduced in the pages of the *Pall Mall Budget*. "Counting the Flock" (23) is terribly vivid, but then there is hardly a landscape in the exhibition which is not. "Old and New Battersea Bridge" (30), by Mr. Sydney Starr, is clever; but the same cannot be said for "Pastoral" (34), where one could imagine that a non-sympathetic person had sat on the newly finished picture, before the colours were dry. We are painfully reminded of Reckitt's blue on looking at "An Old French Peasant" (38). Mr. George Davison might find a suggestion in Mr. Fred Brown's "Sunset at Sea" (41). "A View of Diaple" (42) shows Mr. Walter Sickert almost at his best. "Nature Morte" (44) is good. We suspect a London fog in Mr. Arthur Thomson's clever "Regent's Canal" (46). A boy reading by the light of a stove is well depicted (51) by Mr. E. Sichel. "Mother and Child" (39) is not pleasing. "The First Bawbee" (70) is capital, and some fruit (72) is quite a relief, especially as the picture is excellently painted. Mr. J. J. Shannon's portrait of the "Duchess of Portland" (79) is admirable. The little picture by Mr. Otto Scholderer, entitled "Oysters" (80), is very true to nature. Its neighbour, "The Common," by Mr. F. Bate, is not at all pleasing. Mr. J. E. Christie's "The Pixies' Ring" (83) is decidedly clever. Mr. W. Estall's "The Autumn Sun" (92) is impressionistic and good. "In an Orchard at Finistère" (93) is another example of vivid greens and yellows. Neither of the pictures sent by Mr. Maurice Greiffenhagen (96, 97) appears to us to be worthy of the artist.

#### Thursday Evenings at the Camera Club.

(By ONE OF OUR STAFF.)

ON Thursday, April 9th, the day following the ending of the annual Conference, there was a large gathering at the Camera Club to attend the "Flash-light Demonstration" given by Mr. Cade (of Messrs. Marion and Co.) The Slingsby apparatus was used, and some very successful negatives were taken of the room and the company. Mr. Stromeyer showed some prints from negatives taken with magnesium ribbon placed in the ordinary pendant lamp of a room, the lamp being in the picture. One of these showed very picturesque lighting. Dr. Crocker handed round some photographs of medical cases, showing the service rendered by flash-light on such subjects.

On Thursday, April 23rd, Mr. Frank Howard will read a paper on "Photography in Bye-lanes and Field-lanes." The paper will be illustrated by the lantern.

Mr. Fred. J. Prouting, of Tilehurst, writes:—"The AMATEUR PHOTOGRAPHER appears to be a good medium, even thus early in the season, and I have been astonished at its ubiquity. The enquiries for my lawn tent and studio come from the remotest districts, are businesslike and to the point, and generally lead to satisfactory results. I shall certainly increase my demand upon your space if business and the season advance apace."

**Pearlines.**—Mr. Ernest W. Perry, of Shakespeare Road, Herne Hill, S.E., has sent us a photograph mounted in optical contact with a neat border which is an improvement on the commercial "opalines." He undertakes to mount any photographs as "Pearlines," and the cost is, we understand, eight shillings per dozen for half-plate size. Those who wish to have the views they have taken mounted in an effective manner on glass cannot do better than send to Mr. Perry. A photograph so mounted may be seen at our offices.

Mr. T. H. Taylor, L.D.S., writes:—"I never failed in an advertisement in your paper yet, and consider it the best medium out."



## Camera Club Conference.

THE Conference was resumed, under the presidency of Capt. Abney, at the Society of Arts, on Wednesday, the 8th inst.

The first paper was "Photography and Illustrated Journalism," by Major Nott, in the course of which he said: "It has to be admitted that the retaining, keeping up to date, and handing on the nation's history, not only in its grander phases, but in its humbler domestic life, are inherent obligations we owe to ourselves and to posterity. Now, the part photography can take in this work will undoubtedly soon be one of its most appreciated powers, and elevate it into a position in the art world, where it can be made to stand without a rival. Hitherto, the work that has been done in this connection has largely been in the hands of artists who have learnt to work with the pencil or the brush in some of the various schools of art. Hence, to a great extent, the work has had but little value when regarded from any other point of view than the artistic. Even the most æsthetic portion of the public, who have a keen appreciation of all artistic work, must, in common with that portion which possesses a less keen susceptibility to æsthetic pleasure, prefer, in work of the class to which we are now referring, accuracy of detail, and exactness to facts rather than "pictures" wherein essential features have been sacrificed in order to conform to certain rules which dominate art. The camera par excellence for this class of work is, of course, the one now known as the hand-camera, but many forms of hand-cameras are utterly unsuitable. The great desideratum is simplicity of construction. The camera for the purpose should be light in weight, and its working manipulation be confined to two simple operations: setting the shutter before exposure, and removal of the exposed plate or film afterwards. There should not exist any complicated mechanism liable to get out of order at times, or that cannot stand a certain amount of rough usage. To do the work we are now considering it is absolutely necessary for the faculties to be concentrated upon the scenes themselves, and this is hardly possible if the manipulation of the camera at crucial moments calls for any attention, such as would be required in one where a plate-holder had to be inserted, a shutter drawn, focus adjusted, or the camera had to be treated after the manner required, I am told, in dealing with a naughty girl, well shaken to make it behave, which in one camera I lately possessed was absolutely necessary. The shutter ought to work slowly, and under ordinary circumstances be so used, but possess the means of being readily given increased speed. The character of the lens is all important. It should be of as long a focus as its use in a hand-camera will permit when the considerations regarding definition, focal adjustments, and other questions of like nature have been given the attention their importance demands. The lens should be one that will work at the very largest aperture optically possible. This feature I have come to regard as essential, for it enables photographs to be taken possessing sufficient detail for the purpose we are considering on dark or even foggy days. By using a lens of this character I have procured fairly good views of scenes enacted in a November fog, not, of course, a London particular, but one of the class usually selected by our Lord Mayors for their peripatetic shows. It will also enable the camera to be used in well-lighted interiors, and under many other circumstances utterly impossible if  $f/11$  or even  $f/8$  is the largest aperture permissible." Proceeding, the reader said that films were better than plates for that particular purpose. Above all things, it was necessary that the picture taken should tell its own tale, and for that end the photographer's whole attention and energies should be devoted to studying the scene and selecting the best point of view. In concluding, Major Nott handed round a partially engraved block to which a photograph had been transferred, and which was to appear in the *Daily Graphic*.

The President said it would be very interesting if Major Nott would tell them how the photograph was transferred to the block.

Mr. Debenham pointed out that one of the great drawbacks in the use of reproductions of photographs hitherto had been that they could not be printed on a rotary machine, but the more recent Marinoni machines were more perfect, and the blocks could be worked well on them.

Mr. Welford said he could not see how films were better for newspaper work than plates. On one occasion he took a view for a newspaper, and in an hour a bromide print of the subject was on its way to London.

Mr. Carmichael Thomas, of the *Graphic*, said the photo-

graphers must not abuse the artists too much, and take too much credit to themselves. The illustrated papers benefited greatly by photography, and they now found that there were many occasions on which they need not send artists to places of interest, as they knew there would be plenty of cameras there, the owners of which could send in photographs.

Mr. Hepworth said he had tried, but unsuccessfully, to discover the secret of the transfer of photographs to wood. The best attempt he had made was in the case of a chloride emulsion with very little gelatine, which he rubbed into the block with his finger. The engraver found one sample too hard, and another made the wood too soft.

Mr. Maskell asked for some information about the cheaper methods of reproducing pen and ink sketches in such a way as those often seen in *Pick Me Up*.

Mr. Warnerke said he had made experiments in the same direction, and he found that the best ground for engraving on was an ink transfer made by his simplified collotype process.

Mr. G. Davison said it was quite possible to put any sentiment they saw in a view into the photograph.

Major Nott, in reply, said that the process of transfer was a trade secret. The point in which films had the advantage over plates was that they could be developed at the place where they were exposed, rinsed under the tap, and put in the pocket. When the train was reached, they could be pinned to the sack to dry, and printed before town was reached. That could not be done with plates. There was an advantage in engraving the blocks, as anything not artistic and not necessary to the truth of the picture could be left out.

The President said that if the films could be developed on the spot, it was due to the action of the Camera Club and the AMATEUR PHOTOGRAPHER in awakening the interest of the local photographers and causing them to give such facilities to amateurs. He, however, looked upon that kind of work as a misuse of photography, though perhaps necessary for illustrated papers. It was getting too mechanical.

Mr. Sutton read a paper on "A New Method of Making Photo-Mechanical Printing Blocks." An ordinary gelatine plate was exposed under a negative and a line screen, and then developed with the ordinary pyro developer. The plate is then washed, care being taken that the image does not absorb too much water during this necessary operation. Next, the plate is heated on an iron horizontal surface very gradually by a Bunsen burner, and while this heating is proceeding, a curious change can be observed extending over the surface of the gelatine. The little dots formed by the line screen remain perfectly insoluble, but the gelatine which has been unexposed between those dots melts to a certain extent, and leaves the exposed dots standing up in high relief; in other words, the image engraves itself by means of heat. The plate is next dried, and, after being dusted over with graphite to give it a conducting surface, is at once placed in a copper solution in connection either with a battery or with a dynamo machine, as in the ordinary electrotyping process, and a metal block is the ultimate result.

Mr. Bolas said the paper was an interesting one, but it seemed to him that it was founded on suggestions made some years ago by Mr. Swan.

Mr. Sutton pointed out that the insoluble dots absorbed the soluble gelatine between them in varying proportions, and so the plate really graduated itself.

Mr. Debenham thought much might be expected of the process.

Mr. Warnerke thought the process was different to the one he described some time ago.

Mr. Sutton handed round some blocks and prints, which were excellent, considering the newness of the process.

The President congratulated the Conference and the Club on having had the subject first brought before them. The process seemed to him different to all the other photo-mechanical processes.

The other papers were interesting but extremely technical: "An Application of Photography," by Professor C. V. Boys, in which the experiment was shown of a series of photographs of a falling drop of water thrown in rapid succession on a screen, so that the drop appeared to gradually form at the end of the tube, break off, and fall; "A Review of Photo-Electricity," by Professor Minchin; and Mr. Elder, M.A., showed and explained some samples of Mr. Carey Lea's new allotropic forms of silver.

In the evening the annual dinner was held at the "Criterion," under the presidency of Capt. Abney.



## Quarterly Examinations in Photography.

**Question 1.**—What is meant by ripening an emulsion? Give the different methods.

**ANSWER.**—The ripening of an emulsion is the increasing in size the particles (or crystals) of bromide of silver held in suspension to a size more sensitive to the action of light. It is probably caused by the nitrate of potassium (formed by the chemical exchange) or some other solvent present and the gelatine dissolving and transferring some of the particles and thus building up the larger ones according to the law of crystals. Eder has measured the size of the particles when freshly formed and also when ripened, but in practice the change is noted by the colour of a gas flame when viewed through a thin film of the emulsion, being ruby when first formed and changing through yellow to a blue-gray, beyond which the silver becomes reduced and gives "general fog."

There are two methods in use—(a) cooking, (b) ammonia. (a) The original method of cooking was to keep the emulsion liquid at a comparatively low temperature for several days, but it is now found that boiling at a high temperature for a short time gives the same result. (b) Adding a small quantity of ammonia to the emulsion and ceasing just short of the fogging point. Each maker has his own formula, and uses some modification of either one or both of these processes.

**Question 2.**—A plate has been specially coated with a film of emulsion  $\frac{1}{4}$  in. thick, and is exposed on a brilliantly lit object for one-tenth of a second, yet on development an image is seen on the back of the film. To what action would you ascribe this—the light not having been able to penetrate through the film? And state any other instances where such action may occur.

**ANSWER.**—The phenomenon referred to is caused by the action of the nascent silver formed by the developer from the sub bromide of silver (or whatever the reduction product is) on the silver bromide which is in immediate contact with itself. First the developer reduces the silver sub-bromide to the metallic state, then the silver so formed acts on the bromide of silver behind it, though the latter has not been acted on by light, and reduces it also, and so the process goes on till the back of the film is reached. Captain Abney proved the fact that nascent silver so acts, by coating an exposed plate with a silver bromide collodion film over half its surface. On development, the half so coated was denser than the other portion, the extra silver having clearly been obtained from the imposed film which had not been acted on by light. The reason for this action can, as yet, only be conjectured, but it is probably caused by micro-electrolytic decomposition. If particles of silver are pressed into a gelatinobromide of silver film, and the film is developed without exposing to light at all, black spots appear, each particle having acted as one element of a galvanic couple, and reduced the bromide with which it is in contact.

Similar action takes place in developing a wet-plate negative, and whenever silver intensifiers are used, and very possibly causes the difficulty of getting line engravings copied.

R. C. M.

**Question 3.**—Write an answer to the letter of "E. A. D." on page 224, AMATEUR PHOTOGRAPHER, March 27th, giving your experiences and opinions on the views expressed.

**ANSWER.**—Sir,—Some eighteen months ago I had arrived at the stage to which your correspondent "E. A. D." states he has come, and being directed by a good friend, made some experiments with the different developers, using some two dozen quarter-plates, and cutting each in three (for pyro, hydroquinone, and iron). I learned more than any amount of reading could teach, the result of which experiments were that, in spite of the nasty brown finger, I stuck to pyro, finding that you have so much more control over it than either hydroquinone or iron. Lately, however, I have seen some hand-camera exposures developed with a mixed developer of hydroquinone and eikonogen in proportions of one-third and two-thirds with the alkaline carbonates, which were so superior to mine taken at the same time developed with pyro ammonia (though in the prints there is less difference) that I have been giving it a thorough trial, and find that the mixture gives the advantages of both developers without their faults, as far as under-exposed negatives are concerned; but still you have not so much control as with pyro. Possibly further experiment may show that using the developers in different proportions may give the desired result. I strongly recommend "E. A. D." to sacrifice a few plates as recommended by Mr. A. Clark in experiments.—Yours, etc.,

S. N.

The following gentlemen have entered for the second competition:—"Lindum," "Yxol," "R. C. M.," "Photo-Maniac," "S. N."

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Ashton-on-Lyne.**—The Hon. Sec. writes: "You will no doubt be pleased to hear how the above society is progressing. We have secured excellent premises in Henry Square, which comprise a dark-room (now being fitted), reading and smoke rooms; also large room for lantern and other demonstrations, which will hold about 200 people, and the rooms throughout are splendidly furnished. We have a man and his wife who live on the premises as caretakers to keep the place clean, etc. The rooms are open from 9 o'clock a.m., and our membership is steadily increasing."

**Birkenhead.**—The usual monthly meeting was held on the 9th inst., the President (Mr. G. E. Thompson) in the chair. Mr. W. A. Norrish was unanimously elected a member. A paper was read by the Hon. Librarian, Mr. J. A. Forrest, on "Orthochromatic Photography," a paper which displayed a considerable amount of research. Mr. Forrest, who in the course of his remarks referred to the fact that he was a photographer of upwards of fifty years' standing, had experimented with several different brands of plates, both isochromatic and otherwise, treating the latter with various solutions to increase their colour sensitiveness; the results of his experiments he exhibited and explained at some length. The paper throughout was listened to with evident enjoyment by all. This was followed by a practical demonstration of the printing, toning, and manipulating of Obernetter and Aristotype papers, by Mr. E. M. Tunstall, the Hon. Secretary of the Liverpool Amateur Photographic Association. Mr. Tunstall dealt with the treatment of the prints from their removal from the printing frame to their being ready for mounting, practically demonstrating the various processes throughout. He also exhibited numerous finished results, showing the difference in tone attainable by different toning baths. These results were much admired by all present, special praise being given to those having a matt surface, having been dried in contact with ground-glass. A hearty vote of thanks having been accorded to Mr. Tunstall, the meeting was dissolved.

**Birmingham.**—An ordinary meeting was held on the 9th inst., Mr. W. J. Harrison, F.G.S., in the chair. Five new members were elected. The Hon. Secretary, Mr. A. J. Leeson, exhibited Wray's aluminium mounted lens fitted with Iris diaphragm; the lightness was remarkable and in point of finish perfect. The programme for ensuing session was read as follows:—April 23rd, "Exposure and Development," W. J. Harrison; May 28th, "Stereoscopic Photography," Walter Griffiths; June 25th, "Cameras and their Management in the Field;" July 23rd, conversation meeting and exhibition of survey photographs; August 27th, development competition; September 24th, "Lantern Slide Making," S. H. Fry. The Hon. Secretary (J. T. Mousley), Excursion Committee, read the list of excursions for the year. The Chairman remarked that he was glad to see the Excursion Committee had arranged for many of the outings to interesting spots in the Hundred of Hemlingford, which would greatly help the survey section in that important work. A demonstration on "Alpha Paper" followed.

**Brechin.**—The ordinary monthly meeting of the above was held on the 7th inst. On the invitation of the Committee, about one hundred ladies and gentlemen—friends of the members—were present. Through the kindness of the Editor of the AMATEUR PHOTOGRAPHER, the Prize Lantern Slides of the 1890 Competition were exhibited. They were arranged in four classes: (1) landscapes, (2) figure subjects, (3) animals and instantaneous, (4) architecture. The whole of the pictures shown were much above the average. Some, indeed, if not perfection, approached very close to it, notably the pictures of Mr. Austin, the winner of the Gold Medal in Class 2. Mr. A. R. McLean Murray occupied the chair, and read the notices on the various pictures, and the Treasurer, Mr. Wm. Stewart, jun., attended to the lantern, etc.

**Brixton.**—An ordinary meeting was held on the 9th inst., Dr. Reynolds in the chair. The general business having been disposed of, Mr. Bevins, one of the members, gave a lecture on "Light," illustrating his remarks by diagrams and experiments with the aid of the club lantern, giving instructions for testing the safety of glass for dark-room lamps by means of a prism. The annual club exhibition of members' work will be held at Gresham Hall, Brixton, on Friday and Saturday, the 17th and 18th inst. Lantern shows will be held each evening, and a concert on Saturday.

**Croydon.**—The ordinary meeting was held on the 13th inst. The following gentlemen were elected members: Messrs. Nathaniel Waterall, W. E. Samson, J. Baldock, and W. H. Brown. The prize winners at the late exhibition explained in detail how the winning marks were produced; the explanations inducing much profitable



discussion. The first of the weekly Saturday afternoon excursions of this season will be on the 25th to Dorking, in charge of Mr. G. R. White. The next ordinary meeting will be held on the 27th, subject: "Carbon Printing Processes," by the Autotype Company. The chair was filled by the President in the first part of the evening, but later on, in consequence of Mr. Maclean's indisposition, by Mr. C. F. Oakley. The negative of the view which took the President's medal for the best picture, irrespective of size or subject, was taken on one of Thomas's plates.

**Croydon Micro.**—An extraordinary meeting was held on the 10th inst., Mr. J. H. Baldock, F.G.S., in the chair, when Mr. J. Weir-Brown explained and demonstrated his system of producing "Warm Brown Tones and Sepia Tones on Bromide Enlargements," particulars of which were contributed by him to the *British Journal of Photography* in January last. He had slightly but not materially altered his mode of procedure since the first publication of the process. A number of landscapes were handed round showing both brilliant and soft effects in rich brown and sepia. A discussion followed. Mr. W. Low-Sarjeant exhibited and explained a novel hand-camera which he has recently constructed for his own use. The camera measured externally  $8\frac{1}{2}$  by 7 by 6 in., and was composed of two chambers, the upper one being used for focussing and acting as a view finder, which gives a full-sized view of the picture which is being taken in the lower compartment. The picture was seen and focussed at the moment of exposure. The lower chamber, or camera proper, was fitted with a swing-back and focussing screen for ordinary work. It was also fitted with a specially constructed focussing eye-piece which entirely dispensed with the necessity for using a focussing cloth. Double backs of very light pattern were used, and the camera had a range of focus from 3 to 12 in. A very ingenious shutter was fitted behind the lens flange, giving a range of exposure from extreme rapidity to hours if required, and was pneumatically released, giving an equal exposure to every part of the plate. A novel feature in the shutter was that whatever speed the shutter was set to work at (even at its fastest) at the moment of exposure, without any alteration whatever to it, a time exposure of any length could be given. The camera, was also fitted with a black glass reflector for taking clouds, and when not in use folded into the front; a false bottom with arc struts facilitated the necessary tilting angle for cloud photography. The camera, though so small and compact, was capable of doing every class of work. The next meeting will be held in the old School of Art-room on Friday, 17th inst., at eight, when there will be an exhibition of hand-cameras. The first excursion of the photographic section of the club took place on Saturday the 11th, when, through the kind permission of His Grace the Archbishop of Canterbury, Addington Park was visited, the weather being nice and fine; some good work was done.

**Darlington.**—The usual monthly meeting was held on the 10th inst. There was a good attendance. Mr. J. S. Sinclair read a paper on "Platinotype," and developed several prints by means of the hot-bath process, which were a great success. This paper and demonstration was of especial interest, as very few members have hitherto worked in platinotype.

**East London.**—A special general meeting of this newly formed society will be held in the coffee-room of the "London Apprentice," 333, Old Street, London, E., on the 20th inst., at 8.30 p.m., when the rules drawn up by the provisional committee will be submitted for approval, etc. All photographers and other gentlemen are cordially invited to attend.

**Glasgow.**—The sixth general meeting of the session was held on the 3rd inst., Mr. William Lang, junr., F.C.S., President, in the chair. Mr. James Gardner gave a practical demonstration of the application of the air-brush for working up bromide enlargements, and prints were shown illustrative of the method. Mr. William Hume, Edinburgh, explained the construction and uses of his Cantilever enlarging apparatus, and by its means showed a series of physical experiments projected on the screen. Mr. William Lang, junr., F.C.S., read a paper on lantern slide making by the Woodbury process, and gave a demonstration of its working. Thereafter a number of members' slides were passed through the Society's lantern.

**Hackney.**—An ordinary meeting was held on the 9th inst., Mr. J. Hubert in the chair. The Hon. Secretary drew the members' attention to their new book-case, and hoped to receive books from the various members towards filling it. This being an evening set apart for hand-camera work by Mr. Walter D. Welford, some hand-cameras were shown, among them being the "Radial," which was explained by Mr. Dickenson, and the "Repeater" shown by Mr. Cusworth. Mr. Gosling showed his, a home-made one with dark-backs. The Chairman then introduced Mr. Welford, who preferred to illustrate the uses of a hand-camera by means of the lantern by nearly 200 slides.

**Holborn.**—The usual weekly meeting was held on the 10th inst., Mr. T. C. Hepworth, F.C.S. (President), in the chair, when Mr. J. Traill Taylor gave a short lecture on "The Art Composition of Photography," illustrating his lecture by various photographs. Two new

members were elected. On Saturday twenty-five members attended the club outing to Waterlow Park and, in spite of the unfavourable weather, an enjoyable afternoon was spent on this estate at Highgate. The club is commencing its fourth year of existence in a very spirited manner, no doubt actuated by the success of the past year, its members having been increased to over seventy. Arrangements for the ensuing twelve months are being completed, and special attention is being given to the outings during the coming summer months. Outings to Richmond and Waterlow Park have already been attended, and during the months of May and June excursions have been arranged to Pinner, Panshurst near Tunbridge Wells, Purfleet, Hastings, and London Colney. Arrangements are also being made for a garden party in July. Another special feature of the year's arrangements is a monthly competition. During each of the summer months one print is to be sent in, and during the winter two lantern slides per month. Special subjects will be set by the Committee, and at the end of the two seasons prizes will be given to the members whose prints and lantern slides have received the best average of marks. The club meets every Friday, and one night a month is devoted specially to the instruction of beginners. Full particulars of membership, etc., can be obtained of the Secretary, Mr. J. Smith, 97, Tabley Road, Tufnell Park, N.

**Keighley.**—Under the auspices of the above association Mr. A. A. Pearson, of Leeds, delivered a lecture on "Photographic Chemistry," on Tuesday, 7th inst., before a good attendance of members and friends. Mr. Samuel Bairstow, President of the association, briefly introduced the lecturer. Mr. Pearson said the whole science of photography depended on the fact that certain substances are acted upon by light. They all knew how the sunlight faded the colours of their carpets, curtains, and upholstery, though very slowly; the bright aniline dyes with which many silk ribbons were dyed lost their colour more quickly. The green colouring matter of vegetation was a compound called chlorophyll, which was formed in the presence of white light, so that they had colours formed by light; whereas in the case of dyes the colours were destroyed by light. Those processes were very slow, extending to days and weeks, but there were certain metallic salts, notably some of the salts of silver, which showed a visible colour-change in sunlight in a few seconds, and furthermore underwent an invisible change (which could, however, be rendered visible by the action of certain chemicals, termed developers) in less than the 5000th part of a second. He had a photograph which he had taken of a single spark from a high tension electrical machine, which could not possibly have lasted the 5000th part of a second. It was a wonderful thing that a substance which would keep indefinitely in the dark and remain unaltered a considerable time in a red or yellow light, should have its nature changed by exposure to white light for a shorter time than it would take a person to wink. It was his purpose that night to investigate that change and explain its theory. In order to do that he would perform several experiments in visible changes, and argue from the visible to the invisible. As he previously mentioned, the substances most useful to the photographer were certain salts of silver, and those most readily altered by light were the compounds of that metal with three halogen elements: chlorine, bromine, and iodine. The lecturer fully demonstrated the properties of the halogen elements by several lucid experiments. The lecturer went on to explain, first the chemical changes that took place, and secondly the action of light in bringing about these changes.

**Leicester.**—A regular meeting of the Society was held on the 8th inst., Mr. Frank G. Pierpoint, V.P., in the chair. The ballot was taken for one gentleman, who was unanimously elected; one gentleman was proposed and seconded for ballot at next meeting. The excursions committee was then elected, consisting of Messrs. Pierpoint, Porritt, Bankart, and Wilson, who were requested to make a recommendation to the next meeting of places and dates for the Society's outdoor meetings for the coming season. Mr. Porritt then proceeded to read his paper entitled "Photography, Past and Present with notes on the quality of dry-plates and lantern-slides, and a few remarks on the object of our excursions." During the course of his remarks Mr. Porritt in a very able manner reviewed the practice of photography, from the earliest date of collotype and wet plate processes, describing, in passing, the modus operandi of each process, which was quite new to the greater part of the members; from thence he traced the gradual transition through the various dry processes to the almost perfect condition attained by the present dry-plate. Lantern plates were then treated, the lecturer betraying a considerable leaning towards the collodion-made slide, some excellent specimens of which were passed round. Some very good advice to the members with respect to the management of the forthcoming excursions was then offered by Mr. Porritt, who concluded a very useful, crisp, witty paper, which will remain as an excellent pattern for imitation for the members of the Society. The President, Mr. Pierpoint, in proposing a hearty vote of thanks to Mr. Porritt, traversed at some length some of the points advanced by him with reference to the use of rapid v. slow plates for landscape.



**Lewes.**—An ordinary meeting was held on the 7th inst. Certificates for success in the quarterly competition were presented to Mr. Percy Morris and the Hon. Secretary. The slides sent in to the quarterly competition were passed through the lantern, the Vice-President, Mr. J. Tunks, being awarded the certificate. A number of members' slides were then passed through the lantern.

**Liverpool.**—The second monthly meeting was held on the 8th inst. After a few words from the Secretary upon the objects and programme of the club for the session, a committee was formed to arrange for the afternoon excursions. Mr. W. A. Brown then gave a demonstration on "Hand-camera Work," and exhibited his home-made camera and many of his negatives and lantern slides. Several other members had brought hand-cameras and negatives, which were handed round for inspection. It was decided to have a Wednesday afternoon at Southport and a Saturday afternoon about Sefton during the next fortnight. The next meeting will be held on May 13th, when a demonstration will be given on "Contact Printing."

**Morley.**—A meeting was held on the 7th inst., the Vice-President, Mr. J. Sanderson, in the chair. Members passed round work, done during holidays, which was duly criticised. It was then resolved to have a ramble to Adel on Saturday afternoon, the 18th.

**Newcastle-on-Tyne.**—The next meeting will be held on Tuesday, the 20th inst. Paper and demonstration on "Carbon Printing" by J. Hedley Robinson.

**North London.**—A meeting was held on the 7th inst., the Rev. E. Healy in the chair. Mr. A. P. Wire, Hon. Librarian to the Essex Field Club, gave his new and interesting lecture upon "The Great Road from Aldgate to Colchester," illustrated by views in the optical lantern, many of them being copies of very rare prints. This lecture was a great treat to the society in more ways than one. Not only is Mr. Wire a most enthusiastic and accomplished historian and archaeologist, but he is also an excellent amateur photographer, so that he was able to illustrate his lecture by slides, most of which were his own work, either being copies of rare old prints, lent him by friends, or direct from his own negatives, and consequently many hints were given, in the course of his two hours' lecture, upon the manufacture of the slides, and the lecture was enlivened by anecdotes of the adventures of an amateur photographer. Mr. Wire is brimful of historical, geological, and geographical lore, and had spared no pains in preparing this lecture. The information which accompanies the exhibition of the slides has been gathered from all sources—the British Museum, the libraries of old country houses, and personal investigation—and, in fact, the lecture was a model of what an industrious amateur photographer, with a taste for research, can do by devoting his energies to some particular subject, and following that conscientiously and earnestly. Mr. Wire has an excellent chatty way of delivering his lecture, which, being interspersed with anecdotes, cannot fail to interest and instruct all who may have the pleasure to listen to it. A hearty vote of thanks was accorded to Mr. Wire for his lecture and the exhibition of his new tinted slides.

**North Middlesex.**—The last meeting was held on the 13th inst., Mr. J. W. Marchant in the chair. Mr. Birt Acres read a paper on the "Monochromatic Rendering of Colours by Photography." He said the subject naturally divided itself into two portions—the historical and the practical. He gave a chronological resumé of the growth of photography, and of the researches into colour-sensitive dyes for the photographic plate. The early workers had attempted to secure the colours seen on the ground-glass screen in various ways. Some had tried to obtain reproductions of the colours separately, and to combine them into a whole, and had used glasses of various tints to separate the colours. A difficulty met with was the reflections from every coloured object of white light. He then dealt with the colour-sensitive dyes which had been tried—eosine, erythrosine, chlorophyl, etc., etc.—and said that the addition of ammonia, discovered and patented by Tailfer and his colleagues, had been the factor necessary to secure success. By means of a prism the lecturer projected on the screen a spectrum of the oxy-hydrogen light, showing the colours in great brilliancy. He pointed out that the ray which was lightest in tone to the eye was yellow, the others following in the order of light blue, green, orange, red, and deep blue and violet. The rays when photographed upon any ordinary plate were more or less reversed, the blues and violets showing brightest. He then interposed coloured screens of various tints, showing how they cut off various rays. A series of monochromatic bands were then thrown on the screen, showing the spectrum photographed on ordinary and colour-sensitive plates with and without coloured screens. The series showed clearly that a very pale yellow screen, necessitating about a triple exposure, gave results in monochrome, most nearly approaching the effects of colour as seen by the eye. Copies of paintings, portraits, and views taken in duplicate on ordinary and isochromatic plates were then thrown on the screen. The lecturer said that the difference in the cases of the portraits and the copies of oil paintings was so marked that he found it necessary to state that no retouching had been done.

The views taken on ordinary plates were so good that it seemed nothing better could be wished for, yet when the duplicate taken on the isochromatic plate was shown, the improvement was strongly visible. Mr. H. Smith reported that he had tested the "Barnet" plates sent by Messrs. Elliot and Sons, and had found them of good quality. He also exhibited prints upon "Celerotype" paper, the fineness of the image obtained being much admired. Samples of plates, instantaneous and ordinary, sent by Messrs. Marion and Co., and samples of Dr. Jacoby's chloride of silver emulsion paper sent by Mr. O. Scholzig were distributed to be tested and reported upon.

**Oxford.**—At the meeting on the 17th inst., Mr. A. F. Kerry, M.A., Exeter College, gave a very instructive lecture on "Bromide and Kallotype Paper Printing." The lecture, which was illustrated by various chemical experiments, was accompanied by the making, development, etc., of several prints; there was also a large number of bromide prints, representing under and over exposure; different developers used, thin and dense negatives. After this, the lecturer explained, rather briefly, as it was getting late, the working of the kallotype process. There were twenty-two members present. Mr. Claude Rippon (Merton College) and Mr. H. H. Isons were elected members. One name was proposed.

**Paisley.**—On the evening of the 6th inst. the Society gave a lantern exhibition in the Good Templar Hall. There was a large audience, the chair being occupied by Mr. Stewart Clark, of Kilnside. In his introductory remarks the Chairman referred to the great advances made in the science and art of photography. He remembered about forty years ago seeing his father making his first attempts at photography. The apparatus he used was very primitive indeed, being, in fact, an old camera obscura about the size of a cigar box. He had besides to manufacture his own lenses and prepare his chemicals. Photographers nowadays escaped all the hard and dirty work which the old wet process entailed. The Society in Paisley had done wonders, and it was much to their credit that they had enlisted so many young men, and he hoped young ladies also, into the practice of photography. It was a most entrancing art, and every person who engaged in it became a perfect enthusiast. The exhibition of slides was then proceeded with. The slides in competition by the members of the Paisley Society for silver and bronze medals were shown. This competition included slides by Messrs. Mure, Kilpatrick, Dunn, Thomson, Taylor, Easton, and Jack.

**Peterboro.**—The monthly meeting was held at the Museum on the 6th inst., when Mr. A. C. Taylor read a paper on "Artistic Photography," based on Robinson's works on the subject. There was a good attendance, and the paper was earnestly discussed by most of the members present.

**Putney.**—A meeting was held on the 8th inst., the Rev. L. Macdona in the chair. The set of American slides were exhibited to members and friends. They were greatly admired, those of the ruins of Johnstown being of special interest. It was suggested that had particulars as to plate and developer used, etc., been given in each case, instead of the maker's name, it would have been of greater interest to photographers on this side. The ingenious method of packing was also commented upon.

**Richmond.**—The meeting on the 10th inst. was made an extra lantern night for the purpose of exhibiting the American slides, and for deciding the slide competition. Mr. Horrihan presided, and there was a large attendance of members and friends. The American slides were first shown, and evoked much interest, after which voting on the competition slides took place. Each competitor was required to submit one contact slide from each of three negatives supplied for the purpose by Mr. Cembrano, and the result of the voting was to place Mr. Ardaseer first and Mr. Garrett second; while Messrs. Davis and Ford tied for third place. The Society were again indebted to Mr. Cembrano for the loan of his lantern.

**Sheffield.**—The ordinary monthly meeting of the Photographic Society was held at the Masonic Hall, Surrey Street, April 7th, Mr. B. J. Taylor in the chair. After the ordinary business of the meeting it was arranged to have Saturday afternoon excursions, commencing May 9th to Oughtybridge, also that the first monthly excursion should be to York early in June, date to be arranged. After which Mr. Alleyne Reynolds gave his lecture "A Tour Round Iceland," which was illustrated by a large number of slides, the negatives and slides being made and taken by that gentleman after having made four trips round that island, which was greatly appreciated by the large number of members present.

**Staff. Potteries.**—A lantern exhibition and entertainment was given by the Society, assisted by the Sneyd Recreation Society Amateur Minstrel Troupe, several of whose members are also members of the Society. The exhibition consisted of a number of slides from the Society's collection, together with some made specially for the occasion, including slides of the master and matron, groups of the inmates, some of the guardians, etc. The minstrels gave a very good performance of the usual minstrel order. The whole entertainment was much appreciated and enjoyed by the inmates and a number of visitors who were present.



**West London.**—An ordinary meeting was held on the 10th inst., the President, Mr. W. A. Brown, in the chair. The President invited the co-operation of all the members, with the object of making the annual smoking concert, to be held on the 8th of May next, a success. Slides were then put through the lantern by the Hon. Lanternist, the following members showing slides: Messrs. Bennett, Chang, Dixon, Hodges, Kellow, Lamley, H. Selby, L. Selby, Varden, Whitear, C. Whiting, and H. F. Wilson.

**West Kent.**—A special meeting was held on the 8th inst., Mr. A.

R. Dresser (the Vice-President) in the chair. Mr. W. J. E. Clarke was elected a member. The club monthly outings were then discussed and dates fixed, the first being arranged for Saturday, 9th of May, to Rochester and district under the leadership of Mr. Jones. Mr. W. R. Reffell was then called upon for his paper on "Lantern Slide Making," which was illustrated by the lantern, and listened to with great interest, and contained many valuable hints to the practical worker. Slides by Messrs. Court, Foy, and Grant were also passed through the lantern.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4817. **Antwerp and the Hague.**—(1) What is the average cost per day at middle-class hotels in Antwerp and the Hague, and can ten days be spent profitably in these cities? (2) Are there any good interiors, woodwork especially, and is there much difficulty in obtaining permission to photograph same? (3) Can any reader say from experience which is best—to go by Cook's or on your own independent tour?—**WOODPECKER.**

4818. **Adhesive Mounts.**—Can any reader tell me who now manufactures Wolff's patent adhesive mounts? Messrs. Harold Senior and Co., of Norwood Road, write that they no longer do so.—**SCOTIA.**

4819. **Development.**—Can any kind amateur inform me how to develop a bromide print in which local development has to be resorted to, for, owing to the print not lying quite flat in the developing dish, the developer is apt to spread over portions that are fully developed?—**W. R. P.**

4820. **Curled Mounts.**—I mount my prints whilst wet, which causes the mounts to curl up when dry. Can any one inform me how to prevent this?—**W. R. P.**

4821. **Development.**—A short time ago there was a letter in the **AMATEUR PHOTOGRAPHER** advising tourists when away from home to develop their negatives (but without washing beyond laying them in methylated spirit) or fixing them. Will some one kindly give the number of the paper or the formula?—**R. C. S.**

4822. **Photographing Sunsets.**—Would any of your readers kindly tell me if it is possible to photograph sunsets, and if so, what plate, exposure, developer, etc., is best?—**NOSTAL.**

4823. **Stained Negatives.**—I have some negatives that were intensified with mercuric iodine nine months ago, and now they will not print well, as there is a copper-coloured stain all over them. Can any one tell me the cause, and cure, if any?—**NOSTAL.**

4824. **Changing Bag.**—Can any one give me the directions for making a half-plate changing bag which is very strong and portable?—**S. J. LAWRY.**

4825. **Density.**—How can I, with Ilford pyro developer, increase density, after details are out? Must I add more of solution III.?—**FOREIGNER.**

4826. **Ilford Pyro Developer.**—Must the pyro developer, according to the Ilford formula, be made up fresh for each plate? Mine turns quite black after the first plate and seems not to work properly with a second one.—**FOREIGNER.**

4827. **Partial Intensification.**—How can I intensify part of a negative?—**FOREIGNER.**

4828. **Negative, Film Inside.**—I put a plate by mistake film inside into the dark slide; how can I get the original picture?—**FOREIGNER.**

4829. **Permission to Photograph.**—Is photography permitted in the South Kensington Natural History Museum and the Zoological Gardens, and if

so, whom should I apply to for permission, and what are the rules to be complied with?—**LUX.**  
4830. **Godstone's Print Washer.**—Can any one give me Mr. Godstone's address? Where can I get Houghton's test dark-room?—**C. C. MACKLEY.**

## QUERIES UNANSWERED.

April 3.—No. 4536.

„ 10.—Nos. 4602, 4604, 4608, 4709, 4611, 4615.

## ANSWERS.

4588. **Developer for Bromide Paper.**—Avoir-dupois weight.—**EDYLLION.**

4588. **Developer for Bromide Paper.**—I should say that they were apothecaries', but if not, it will not make much difference.—**ALPHA.**

4589. **Developing.**—Drop a card to Messrs. Edwards and Co.—**EDYLLION.**

4589. **Developing.**—The same proportions which you use for ordinary plates will do. You may please yourself which you use. As for me, I like quinol.—**CHESTER.**

4589. **Developing.**—Of 10 per cent. solutions take the following for Edwards's plates:

10 per cent. pyro solution ... 21 minims.  
" " brom.-amm. solution ... 5 "  
" " ammonia solution ... 20 "

to the ounce of water. Pyro is far the best for any negatives.—**ISIS.**

4590. **Pinholes.**—Prevention is better than cure. A well-known maker of plates states that a fertile cause is soaking the plate first in water. He advises pouring on developer straight away.—**ISIS.**

4593. **Lenses for Hand Cameras.**—The Club lens, made by Adams, is a very good one. Get their "Annual," and see for yourself.—**PORBUS ACIUS.**

4593. **Lenses for Hand Cameras.**—Taylor's (Taylor and Hobson, of Slate Street, Leicester) have a splendid reputation. Well-known workers use them. Their 6 in. detective and other lenses of same kind are to be recommended for fixed-focus work. Write for their catalogue; prices very reasonable.—**ISIS.**

4593. **Lenses for Hand Cameras.**—Undoubtedly the two best lenses are Ross' Universal Symmetrical and Optimus wide-angle Kuryoscope, the former 4½ in. focus, working at about  $f/5\frac{1}{2}$ , price £5, and the latter, 4 in. focus, working  $f/8\frac{1}{2}$ , price £3 3s. I prefer the latter, as I have a similar lens which answers admirably and gives a wide angle when required, which is a great advantage at times. The Ross would require stopping down to cover a quarter-plate, there would then not be much difference between them.—**EDYLLION.**

4595. **Lighting Backgrounds, etc.**—There is a capital article in last week's number on "Home Portraiture." For exposure, on a fairly bright day near window, I find 1 second, working  $f/8$ , on an Ilford extra rapid plate developed with two grains pyro with ammonia gives all detail and plenty of density.—**EDYLLION.**

4598. **Houghton's Tent Atelier.**—Houghton's address is 89, High Holborn, London, W.O.—**CHESTER.**

4599. **Lens and Shutter for Detective Camera.**—See answer to 4593.—**ISIS.**

4599. **Lens and Shutter for Detective Camera.**—See answer to 4593.—**PORBUS ACIUS.**

4599. **Lens and Shutter for Detective Camera.**—Shew's Eclipse repeating shutter, made by Shaw and Co., 87, Newman Street, W., would suit you, as it never requires setting. For lenses, see Answer 4593.—**EDYLLION.**

4600. **Watkins' Exposure Meter.**—Capital meter for camera exposures, but no use for printing. The Autotype Company will provide you with a suitable one for use with silver paper, or any firm will get it for you.—**ISIS.**

4601. **Matt-Surface Paper.**—Scholzig's is first-class; address, 31, Binfield Road, Clapham. On the contrary, he at all events says do not wash in more than one water. Use his toning formula. Detail is lost in all matt papers to some extent.—**ISIS.**

4601. **Matt-Surface Paper.**—Obernetters make a good and reliable matt-surface paper. Almost any toning formula will do. You must in all cases print deeper than ordinary paper. It is possible your fixing bath was too strong; 20 per cent. is quite strong enough. It is better to give a little washing before toning. If you do not care for the purple tone, print under green light.—**IKKO.**

4601. **Matt-Surface Paper.**—I should advise "Sutton," if he wants silver paper, to try the Blackfriars Co.; but why not try bromide? I find the following a very good bath;—

Chloride of gold ... 1 gr.  
Acetate soda ... 30 "  
Water ... 8 oz.  
To be prepared one day before use. Or, toning and fixing:—

Chloride gold ... 1 gr.  
Phosphate of soda ... 15 "  
Sulphocyanide ammonium ... 25 "  
Hypo ... 240 "  
Water ... 2 oz.

The prints ought to be washed before toning.—**FRIDA.**

4601. **Matt-Surface Paper.**—J. R. Gotz, of 19, Buckingham Street, Strand, sells a very good matt-surface paper. A combined toning and fixing bath is not so likely to produce such permanent results as when used separately, on account of the liability of a certain amount of sulphur toning. Why not use the uranium bath? It is cheap and gives capital results. I give the instructions from Wall's "Dictionary" in case you are not able to refer to it.

Chloride of gold ... 4 gr.  
Nitrate of uranium ... 4 "  
Chloride of sodium (salt) ... 60 "  
Acetate of sodium ... 60 "  
Distilled water ... 32 oz.

Neutralise the gold and uranium previously dissolved in a little water with bicarbonate of soda. The prints should be rather deeply printed and washed free from silver and then toned. This bath gives fine blacks and with plain or matt-surfaced papers the results can hardly be told from bromide prints. The following is the best fixing bath for this, and the prints should be washed in salt and water after toning:

Hyposulphite of soda ... 2 oz.  
Salt ... 1 "  
Bicarbonate of soda ... 1 "  
Water ... 1 pint.

—**EDYLLION.**

4603. **Hand Camera.**—If your camera is Lancaster's Instantograph, he supplies, I think, a case for it. I daresay it would fit any other quarter-plate camera.—**FRIDA.**

4603. **Hand Camera.**—Re adapting quarter-plate camera for hand purposes. If "J. H. W." will write me, through the Editor, I will give him particulars of a box I used with one of Underwood's quarter-plate Instantos, which I wish to dispose of.—**SHOTS.**

4605. **Washing Soda Developer.**—I should prefer to use pure anhydrous carbonate of soda, which does not give such yellow negatives as "washing" soda; and take enough with you on starting, about 5 or 6 gr. to the ounce of developer is sufficient unless the exposure has been very short, when it can be considerably increased.—**EDYLLION.**

4605. **Washing Soda Developer.**—Try formula recommended by Mr. Paul Lange, which is:—

Washing soda ... 2 oz.  
Bromide ammonium ... 20 gr.  
Water ... 16 oz.

For use take ½ oz. of above, make to 2 oz. with water, and add, for landscape, 4 gr. dry pyro, portrait, &c. 2 gr. The colour is a yellow on completion, and gives negative a thin look, but, on printing, will be found different. Would strongly advise you to use Powell's pyro developoids, which are accurately weighed to 2 gr. in each pellet. His advertisement appeared in last week's **AMATEUR PHOTOGRAPHER**.—**IKKO.**

4606. **Rapidity of Lenses.**—I think you will get better results with a R.R.; they are frequently used by professionals in preference to a portrait lens. Watson's half-plate R.R. works at  $f/8$ ; a lens working at  $f/4$  will require one-fourth and at  $f/6$  one-half the exposure of the R.R.—**EDYLLION.**

4603. **Rapidity of Lenses.**—The rapidity of a lens depends on the size of the aperture at which it is worked. If your lens has a full aperture of  $f/8$  you would find a portrait lens working at  $f/6$  twice as rapid, and one of  $f/4$  four times faster. For heads and half lengths you would do better with a good portrait lens.—**ISIS.**

4606. **Rapidity of Lenses.**—Portrait lenses for amateurs who only take them for amusement is quite a mistake. Your R.R. lens, working presumably at  $f/8$ , ought to be fast enough for such work, and, beyond rapidity, nothing gained. Then landscapes cannot be taken with them, and they are a sort of white elephant.—**IKKO.**

4607. **Mounting Prints.**—A beginner will find a weak solution of gelatine cleaner and in every respect better than starch. Soak the print for ten minutes and apply gelatine with flat brush.—**SCOTIA.**

4607. **Mounting Prints.**—I should advise "Beginner" to purchase a bottle of Percy Lund and



Co.'s professional mountant. I got some the other day from the firm, and I consider it one of the best, if not the very best, mountant in the market. It never curls the mount, nor does the print leave its position after being squeezed on to it.—**EXPERIENCE.**

4607. **Mounting Prints.**—Do not give up starch. Nothing to compare with it. But make it right. Cover the bottom of a tea-cup with knobs of starch, pour on a very little cold water, just enough to make a thin paste like cream, get all the lumps out of this with a spoon, then with a kettle of boiling water pour on with one hand and stir rapidly with the other till it turns to a jelly; after cooling a little it is fit for use. Don't make the jelly too stiff or the reverse. Damp the prints first, apply with a flat brush (camels-hair), and don't use too much. When laying on the mount, curve it down from the middle and with a clean handkerchief smooth away any bubbles from the centre to the edges.—**ISIS.**

4610. **Bromide Paper.**—Cut a little strip off and expose, and then develop, but you can generally tell by the coated side curling inwards; the same applies to plain paper.—**R. E. S.**

4610. **Bromide Paper.**—If "Power" will apply the tip of his little finger to the corner of the paper he will find that the sensitised side in each case is adhesive.—**SCOTIA.**

4910. **Bromide Paper.**—Has a tendency to curl inwards on the sensitised side. Matt paper is harder to judge, but examine it carefully by reflected light and look along the surface. The sensitised side will show of a more dead white, the reverse side showing more the texture of the paper.—**ISIS.**

4610. **Bromide Paper.**—If "Power" will feel the edges of any ready-cut paper, he will find it slightly curled by the cutting machine; the concave side is the sensitive side.—**A. J. SMITH.**

4610. **Bromide Paper.**—Hold it by the corner for a minute, when it will slightly curl. The inside is the sensitive side. Matt paper is generally rolled sensitive side inside; if flat, cut off a small strip and expose it.—**EDYLLION.**

4612. **Dark Slides.**—Tylar's are reliable, and well worth buying.—**EIKO.**

4612. **Dark Slides.**—Try Tylar's metal slides; they are, I think, the best. A set of six quarter-plates will cost 15s., to be had from W. Tylar, 57, High Street, Aston, Birmingham.—**THE SHARP 'UN.**

4612. **Dark Slides.**—Tylar's dark slides are the best; they are quite reliable and light tight, so far as my experience goes. Price for six slides with adapted screen, 15s. Tylar's address is 57, High Street, Aston, Birmingham.—**EDYLLION.**

4613. **Barnmouth and Neighbourhood.**—If "G. W. B." likes to write to me (address with Editor), I shall be pleased to tell him all I know about the district, as I stayed for some weeks in the neighbourhood last summer. I don't know about a dark-room, but I should think the local photographer would allow the use of it as it would not be a very busy time just now.—**EDYLLION.**

4614. **Eau de Javelle.**—This is really of little use; in fact, all hypo eliminators are delusive. If there is a choice, peroxide of hydrogen is the better, but it must be used very weak (*vide* Wall's "Dictionary"). If your water supply is deficient, print by platinum-type method, as less washing water is thus required.—**EIKO.**

4616. **Stops for Lenses.**—To get the diameter of your stops, divide the focal length of your lens by the focal number of your stops.—**R. E. S.**

4616. **Stops for Lenses.**—Focus sharply with full opening; then measure the exact distance from the diaphragm slot to the ground-glass, then make your stops with apertures bearing the following proportion to that distance, viz.:  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{1}{6}$ ,  $\frac{1}{8}$ ; these will then represent the following numbers of the uniform system of the Photographic Society: 16, 32, 64, 128, and 256.—**EDYLLION.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED: AM: PHOT.**

**NOTE.**—In this column we cannot advise upon purchase of APPARATUS, PLATES, PAPER, or PHOTOGRAPHIC MATERIALS.

Advice will be given upon questions of "Photographic Procedure," negatives and prints will be criticised, and every help given to the worker in photography.

H. H. COBB.—(A) Yes, the papers are the same, we believe. (B) Pour it back into the bottle and add fresh gold in the proportion of 2 gr. to every sheet. (C) Yes. (D) Certainly, the results are more brilliant and decidedly superior. (E) We do not think there is much choice in the matter; 3, 2, 1, 4, perhaps.

MONTAGUE.—Can you not call upon us one Monday from two to five, when we could explain more fully

to you? If not, send us a stamped directed envelope and repeat your query and we will write you.

OBERKREITER.—You did not carry your toning far enough. For purple tones it is necessary to carry the toning till the print shows no sign of red in the shadows when held up to the light and looked through.

J. W. HUNTER.—We have no prints from you now. The bromide prints are over-exposed and over-developed.

R. HARTLAND.—Letter by post.

C. J. EVANS.—Your negative is well exposed and we should say slightly under-developed, consequently the print is slightly wanting in contrast.

TE WIRIMU.—Let us know what lenses you have. The print you enclose would certainly have been much improved by stopping the lens down, and we think you have used a little too much reducing agent (pyro or hydro) in the developer, so as to make the petals too white in some cases. In photographing such a near object, have you taken into account the increase of focal length and consequent decrease of ratio aperture, a very important point in calculating exposure? On hearing from you we will write or answer next week.

J. H. HARDY.—We always prefer the bench breast high, so that we can sit at our ease on an ordinary office stool or high chair and develop without getting tired, or breaking our backs by stooping over a low bench. We would also suggest a folding flap underneath the window, which can be supported, when used, by two iron rods, for the support of camera and easel for enlarging. Two or three shelves for bottles, plate boxes, etc., would be handy, and a small bench opposite the developing bench, to be reserved solely for filling dark slides, etc., thus obviating any chance of contamination from chemicals; this might also be a flap to drop down. We shall be pleased to give you any further assistance.

YXOL.—(1) You entirely omit any mention of the acid boiling method, and also the cold emulsification process, both of which are specially suitable for amateur workers. (2) You hardly grasped the fact that the examiners wanted particular instances of such action. (3) Why no answer to this question?

PHOTO-MANIAC.—(1) See answer to YXOL.

S. N.—(1) See answer to YXOL.

R. C. M.—See Rule 4, please. (1) See answer to YXOL.

J. W. HAIGH.—The paper is made from Captain Pizzighelli's formula, with, we fancy, an arrowroot sizing. We do not know, of course, whether it is English make, but the sizes lead us to believe not, as the measurements agree with those of another paper of foreign make. The paper is always less sensitive in winter than in summer, and the veiling flat images are due to general reduction of the platinum by damp and atmospheric influences. Could you not undertake the preparation for yourself? It is by no means difficult.

MUWA.—The correct amount of water for the citrate of soda restrainer mentioned in Wall's "Dictionary," second edition, page 219, is two and a-half ounces. There is no absurdity about it. The solution is recommended to be kept in this concentrated form to avoid the growth of mycelium, which always occurs, and is extremely annoying in more dilute solutions. You will be pleased, no doubt, presently, to see your dilute solution grow well. If you follow out the directions given, you will find it correct in action. In the formula given on page 50, the correct quantity is ten ounces, the idea being to make a so-called 10 per cent. solution. The index to vol. ii. of the *Reporter* will be issued with the June number.

ABORIGINAL.—(1) You give us no idea of aperture of lens. Can you not send us up a negative, and then we will try and help you? Or if you will send us a negative and an exposed and undeveloped plate, we will see what we can do for you. (2) We should choose a No. 2 of 6 in. focus. (3) We prefer 3.

VEROX.—The best formula we can give you is Chapman's, of Manchester:—

Hydroquinone ...	...	...	40 gr.
Bikomen ...	...	...	120 "
Sodium sulphite ...	...	...	480 "
Citric acid ...	...	...	20 "
Distilled water, to	...	...	20 oz.

Potass. bromide ...	...	...	5 gr.
Sodium carbonate ...	...	...	60 "
hydrate ...	...	...	30 "
Distilled water, to	...	...	20 oz.

Mix in equal parts for use.

JOHN JAMES.—You may disregard the small blemishes in the lens; practically, they will have no ill effects on the image.

R. E. S.—Platinum toning is rarely successful on albumenised paper. No. 1 is bad. No. 5 is better, but looks as though you used too much acid. No. 6 strikes us as being from a poor thin negative; you can get blacker tones than this. No. 2 is all right. No. 3. Bath too strong. No. 4. Fair, but still it hardly comes up to what can be done. Try a plain paper, print deep from vigorous negatives, and then try. If your prints were well toned they certainly might stand a chance, especially 4 and 5. Do you want to sensitise albumenised or plain matt-surface paper? Our Competition prints are sent to individuals as well as societies. The amount of liq.

ammon. fort. should be 4 or 5 minims. Do you want your prints back?

AFRICANUS (Natal, S. Africa).—(1) Print rather deeply, and then use the following bath after well washing the prints:

Chloride of gold ...	...	...	15 gr.
Carbonate of soda ...	...	...	60 "
Acetate of soda ...	...	...	1 oz.
Distilled water ...	...	...	7 1/2 "

Dissolve your gold in half an ounce of water, add the carbonate of soda, and allow to stand for an hour; then add the acetate and remainder of the water. Keep this stock solution well corked in the dark and cool if possible. When required for use take half an ounce and mix with half a pint of hot water; when about 70 degs. to 80 degs. F., tone the prints and carry the toning till, on looking through them, there is no sign of red in the shadows, then fix in a solution of hypo at the same temperature (1 part of hypo to 5 of water), to every pint of which 1/2 oz. of carbonate of soda is added. The paper you are now using is a very good kind. (2) The mixture of ox-gall will keep almost any length of time and the peculiar, well, we'll call it smell, is characteristic of this preparation. Purified ox-gall, which also smells badly, may be obtained from any chemist, the trade name being *Fel Bovinum Purificatum*. (3) The three methods of marking diaphragms are—(a) the Ratio or *f/x* system, (b) the U.S., uniform standard, system of the Photographic Society, and (c) the Decimal, known as Dallmeyer's. The ratio system numbers are obtained by dividing the focus by aperture of diaphragm. The U.S. numbers take *f/4* as the unit and call it 1. The decimal system numbers are obtained by dividing the focus of lens by aperture of diaphragm, squaring the result, and dividing by ten. Thus focus of lens = 8 in., aperture of diaphragm = 1 in. =  $f/8$ ,  $8 \times 8 = 64$ ,  $64 \div 10 = 6.4$ , the number in Dallmeyer's decimal system. Always pleased to help you, especially as you are so far off.

BEGINNER.—"Experimental Photography" (Leaper), 1s.; "Amateur Photographer's Annual," 1s.; both to be had of our publishers.

X. Y. Z.—We have no knowledge of such a firm. All photographers for the Government service are, we believe, appointed from the Chatham School of Engineering.

H. S. W. E.—We know of no one who loans hand-cameras, but you might send up a query for our "Queries and Answers" column. Certainly 5 by 4 is a better size. Finders should be on top and side of a hand-camera.

FLETCHER HILL.—Will reply next week.

DEVELOPID.—Thanks for your letter. We will see what can be done about the certificate.

ANCELL.—(1) With books the copyright holds good for forty years. (2) At the copyright office, Stationers' Hall Court.

## Quarterly Examinations in Photography.

### QUESTIONS.

- What is the meaning of the terms "Isochromatic" and "Orthochromatic," and which is correct? State the theory involved in orthochromatic photography.
- What is the action of a mixture of bichromate of potash, hydrochloric acid and water on a dry plate before exposure, after exposure, and after development and fixing?
- Define the terms stop, diaphragm, F/8, U.S. No. 2; and give Dallmeyer's system of numbering the aperture of diaphragms?

(Latest Day for Answers—April 27th.)

### RULES.

- Answers must be received on the morning of the Monday week following the publication of the question.
- All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.
- A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.
- Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.
- Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and



practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; and all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed to:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. **Halfpenny Stamps preferred.** A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

**Deposits for goods** to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

**Advertisements** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," etc. — AMATEUR PHOTOGRAPHER, October 6th, 1888, to present date, clean, perfect; who offers? — Miss Hands, Llanberis, North Wales.

**Backgrounds.** — Backgrounds for sale, two (exteriors), rustic stile, garden terrace, distemper on calico, price 6s. 6d. each; also Scholzig's graduated background, for bust. — Baxter, Bramley, Leeds.

**Bicycle.** — Safety, celebrated Ormonde, first-class machine, cushion tyres, balls all over, including pedals, condition good as new, and warranted faultless; take 8 guineas; very genuine bargain; approval. — Safety, 2, Tower Street, Ipswich.

**Camera, etc.** — Whole-plate camera (Rouch's), 3 double backs, tripod stand, two fronts, good order, only two years' old, excellent instrument; only £8. — H. Holt, Conservative Club, Liverpool.

Underwood's half-plate Instanto, five double backs, turntable, and tripod, new; 90s., or offers. — R. T. Walker, Balance Street, Uttoxeter.

Half-plate Instanto, no lenses, quarter-plate, folding tailboard, Instanto lens and shutter; offers; or exchange half wide-angle lens. — A. Rowe, Brighouse, Yorkshire.

Lancaster's half-plate Merveilleux, new, 1890; cash price 31s. — Smyth, 27, Gower Street, Peckham Rye. Whole-plate box camera, polished, new, with two double slides, swing back, adapted for quarter-plate lens, or using front lens of same, taking whole plate portraits or views; 15s. — Hooper, Cumberland Road, Hanwell.

Keynolds and Branson's 7½ by 5 parallel, long-extension, double pinion camera, three book slides, Eastman's roll-holder, Funnell's shutter, black leather bag for camera, and solid leather case for slides, only used once; cost £17 17s.; price £10 10s. — Smeeton, 13, Broomfield Road, Leeds.

**Cameras, Lenses, etc.** — Quarter-plate Lancaster's Instanto, with superior rectilinear lens, two double backs, and stand, complete, 26s.; very superior dark box for 7 by 5 plates, 2s. 6d.; strong lead-lined developing sink, cost 20s., price 10s. — J. D. Pearson, Chilwell, Notts.

Lane's improved 5 by 4 camera, three double backs, reversing frame, stand, Ross' lens; £4; or separately. — Searle, Walmers.

Lancaster's half-plate Instantograph camera, 3 double dark-slides, tripod, lens with instantaneous shutter, offers? Ross' half-plate portable symmetrical lens, 55s. — R. Heitcheus, 34, Longcross Place, Cardiff.

Hare's 5 by 4 new long-extension camera, reversible holder, three double slides, Eastman roll-holder, tripod stand, focussing cloth, view-finder, solid leather case, cost over £13, price £10; Dallmeyer's 5 by 4 rapid rectilinear, and Thornton-Pickard shutter, cost £5 8s. 6d., price £4 10s. All the above are absolutely new, bought last month, and sold on account of owner purchasing larger set; approval. — Apply to Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C.

Whole-plate Instanto camera, with three dark-slides, Ashford stand, Beck's R.R. lens, bag, etc., complete; will sell together or separately. — Crossley, Rodley, Leeds.

Lancaster's half-plate International camera, lens, dark-slide, and stand, 70s.; quarter wide-angle Rectigraph, 20s. — Cain, 2, Orrisdale Terrace, Cheltenham.

Lenses, cameras, printing frames, mounts, tripod stands, all surplus, less than half cost; list on application. — 1A, Lansdowne Road, Tottenham, N.

Lancaster's quarter Instantograph (1890), three double backs, rapid Rectigraph lens, tripod, and waterproof cases; cost £4 10s.; price £3 5s. — Arthur Hogwood, Plough Road, Rotherhithe, London, S.E.

Half-plate Lancaster's 1891 Instantograph camera, dark-slide, tripod, fitted rapid rectilinear lens, as new, for 70s. — 2, Hawthorn Villas, Slad Road, Stroud, Glos.

Collins' Pocket cameras in cases, 5 by 4 and quarter-plate, each with six double backs, also fixed focus hand-cameras, working with above backs, lenses, Ross' Nos. 2 and 3 portable and Shew's Eclipse; above equal to new; no approval. — Mr. H. Miles, 19, Kensington Crescent, W.

**Condenser.** — 12 in. condenser (by Ross); cash offers, or exchange good hand-camera. — Harry, 22, Ashton Street, Brighton.

**Hand-Cameras, etc.** — No. 2 Kodak, not a mark on it, in leather carrying case, cost £5 9s. 6d., cash £5 5s.; reason for selling, having larger size same make; three half-plate spools Eastman's stripping films, half-price. — Hibbert Bros., Norfolk Street, Sheffield.

Abraham's Ideal, cost £6 10s.; will exchange for quarter-plate camera and cash, or offers; gives good results, and nearly new. — Can be seen at AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

No. 4 Luzo quarter-plate hand-camera, with special R.R. lens, stops, and focussing arrangement, loaded for 50 exposures; cost £10 10s. three months ago; will take £6 10s. — Address Camera, Photographic Society, 15, Dawson Street, Dublin.

Hand-camera, made to order, 15 quarter-plates, focus every picture if necessary, no dark-slides, f/8; worth £10; only £5 10s.; can be seen any evening. — 52, Jermingham Road, New Cross.

Shew's quarter-plate Eclipse hand-camera and four double backs, tourists' case and sling, complete, in first-class condition, £4; stand to match, 10s. — A. Welch, Crossgate, Cupar.

Automatic hand-camera, for 12 quarter-plates, lens, shutter, and finder, complete, thorough working order, a bargain; 40s. — A. Mercer, 16, King Street, Sparkbrook, Birmingham.

Adams' Ideal, one movement; specimen free; offers? — H. Short, Perryn Road, Acton.

**Lenses, etc.** — Optimus 7 by 5 R.R. lens, good; 39s. — No. 135, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Optimus 5 by 4 wide-angle doublet, new; 23s. — Hawkins, Lorne Villa, Farnham, Surrey.

Hare's whole-plate changing box, in solid leather case, £3 5s.; Wray's whole-plate landscape lens, with Iris diaphragm, £2 8s. — Baird, 15, Lothian Street, Edinburgh.

Ross' No. 5 portable symmetrical, new last season. — H., 55, Val Plaisant, Jersey.

Wide-angle rectilinear (Steinhilf's), 5 in. focus, 50s.; pair of Grubb's single, 6 in., matched for stereoscopic work, 60s. — G. M. Iliff, 11, Martineau Street, Birmingham.

Wide-angle Wray's half-plate, scarcely used, splendid instrument; £2 5s. — Paterson, Victoria Crescent, Barnsley.

Half-plate lens, with Iris and shutter, as supplied with Instantograph; 15s. — No. 136, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Laverne's new celebrated 5 by 4 defective lens, as fitted to Ideal, 25s.; automatic shutter, for time and instantaneous exposures, never requires setting, fitted with pneumatic release and adjustable flange, 18s.; both nearly new. — Meadway, Vestry Hall, Church Row, Bethnal Green.

**Roll-Holder.** — Eastman's quarter-plate roll-holder, new, perfect; wanted offers. — Lingard, Draper, Bradford.

**Sets.** — Lancaster's quarter-plate International camera, leather body, lens, shutter, double slide, back and side swing, reversing back, horizontal or vertical folding stand, all complete in deal case; cost £2 10s. a few weeks ago; price £2; exchange

and cash for Lancaster's half-plate Instantograph set; approval; deposit each way. — Mace, Garden Cottage, Cheltenham.

Lancaster's quarter-plate Instantograph, with patent adjustable diaphragms and instantaneous shutter, only used few times, with universal 3 fold stand, two mahogany and three Tylar's double slides; buying half-plate; price £3 5s. — Naylor, 77, Cadogan Square, S.W.

For sale, an absolutely new photographic outfit, consisting of a 15 by 12 Spanish mahogany long-extension camera, with vertical and horizontal front, reversing frame at back, rack and pinion focussing, morocco leather bellows, three double dark-slides, very best construction, Black Band rapid rectilinear lens, solid leather camera case, lock and key, carrying straps, tripod, stand, and focussing cloth; property of a nobleman. — Can be seen at the Stereoscopic Co.'s, 108, Regent Street, London, W.

**Sundries.** — Lancaster's patent Watch camera, for waistcoat pocket, 25s., with six slides, cost 40s.; Lancaster's new leather-bound case, for half-plate stand, 3s.; Lancaster's Universal stand, half-plate, with new patent adjusting turntable, 10s.; compound focussing glass, brass, 2s. 6d.; alpenstock camera stand, half-plate, very light and portable, 8s.; Fallowfield's celebrated rapid doublet lens and stops, 7½ in. focus, half-plate, 40s., guaranteed equal to Ross', Dallmeyer's, or any first-class production; Watkins' exposure meter, 10s. 6d., good condition. — E. W. Stedman, Ashford, Kent.

Will exchange my double-barrelled breechloader, 12 bore (by Adkin), for a 6½ by 4½ Dallmeyer wide-angle long-focus landscape lens; approval with pleasure. — J. A. B. Liberal Club, Saffron Walden.

Induction coil, 2 in. spark, commutator, vacuum tubes, bichromate battery, 9 ft. sheet, and elevator. Wanted, good camera, or cash offer. — 190, Heyside, Royton.

## WANTED.

**Cameras, etc.** — Underwood's whole-plate Exhibition camera, or Lancaster's extra-special, complete, also quarter dark-slides. — Crossley, Rodley, Leeds.

Lancaster's half-plate Instantograph or International, or other good make, three double backs, cheap. — J. C. Munro, 44, Falmouth Road, London, S.E.

Cash and useful exchange offered for good whole-plate studio camera, with swing-back, etc., also whole-plate stand, burnisher, and adult head-rest wanted. — 3, Kent Terrace, Swanley Junction.

Old camera bellows. — Particulars to O. E. Humphries, 29, Grafton Road, Holloway, London, N.

**Cameras, Lenses, etc.** — Half International '90 or '91 pattern camera, stand, lens, etc., must be good and cheap; approval cash. — Holman, Penarth, Cardiff.

Lancaster's 1890 Instantograph quarter-plate camera, three wooden dark-slides, tripod, and wide-angle Rectigraph lens, on approval; will give new hand-camera, or violin and box, etc., and cash. — Jackson, 12, Oldham Road, Failssworth, Manchester.

Half-plate camera, with lens, dark-slide, and tripod, for cash. — Apply to A. Wolfe, Athelstane, Nocton, Birkenhead.

**Hand-Cameras, etc.** — Swinden and Earp's 5 by 4 detective, No. 4 Kodak, regular or junior; also second-hand lantern slides, sets, stories, etc. — W. V. Morris, Parade, Cork.

Detective hand-camera, either Rover Quadrant, Turnbull's; size 5, 4 will give half-price. — Wratishlaw, Braunston, Rugby.

Facile or other hand-camera. — Dunn, Town Hall Chambers, Great Yarmouth.

**Lenses, etc.** — Lancaster's half-plate Instantograph lens and shutter. — W. H. C., 12, Stanley Terrace, Vartry Road, Stamford Hill.

5 by 4 rapid rectilinear wanted, in exchange for half-plate rapid rectilinear, fitted Waterhouse stops. — J. M. Kennedy, 7, Royal Bank Place, Glasgow.

Lens, 15 by 12 R.R., by good maker. — Particulars, with price, to E., 16, Parish Ghyl Road, Ilkley.

Half-plate wide-angle rectilinear lens, Optimus preferred; exchange hand-camera. — Calcutt, 210, Portman Buildings, Lisson Grove.

**Set.** — Half-plate or stereoscopic apparatus, in exchange for good violin, bow, and case, cost £5 10s. — Gott, Ironmonger, Keighley.

**Slides.** — Double dark-slides, for Lancaster's half-plate Instantograph. — Jones, 21, Albert Road, Brockley, S.E.

**Sundries.** — Half-plate camera case, 7s. 6d., also negative rack, trays, sundries; fullest particulars. — Payne, High Street, Saffron Walden.

**Tripod.** — Whole-plate tripod, sliding legs, perfectly rigid, Ashford's preferred. — E. B., Dringholme, Dringhouses, York.

## Lantern Slide Exchange.

**NOTE.**—There is NO CHARGE for insertion in this column. All announcements must be received by Tuesday morning.

O. Appleton, 4, Lawrence Street, Darlington, will exchange lantern slide (unmounted) of Mr. Gladstone for any other celebrity.



## NOTICES TO SUBSCRIBERS.

*Subscriptions must be prepaid.*

UNITED KINGDOM.....	Six Months, 6s. 6d.....	Twelve Months, 10s. 10d.
POSTAL UNION .....	" " 6s. 6d.....	" " 18s. 0d.
INDIA, CHINA, ETC. ....	" " 7s. 6d.....	" " 15s. 3d.

## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

NOTE.—To ensure insertion, all Communication should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.**—Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**E. G. PLATT,**

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**"AMATEUR PHOTOGRAPHER"****PUBLIC SCHOOLS COMPETITION.**

OPEN TO BOYS UNDER SEVENTEEN YEARS OF AGE.

Class I. Landscape. "Amateur Photographer" Silver and Bronze Medals.

II. Portraits, including Groups " " "

III. Animals " " "

IV. Architecture " " "

NOTE.—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date June 17th.

**"AMATEUR PHOTOGRAPHER"****Ladies' Second Photographic Competition****PRIZES.**

FIRST PRIZE.	SECOND PRIZE.	THIRD PRIZE.
GOLD MEDAL.	SILVER MEDAL.	BRONZE MEDAL.

(These Medals, of the smaller series, will be appropriately mounted as Brooches or Pendants if desired).

**SUBJECTS:** Landscape or Seascape—Landscape with Figure—Portraiture or Figure Study.

NOTE.—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date August 22nd.

# "AMATEUR PHOTOGRAPHER" COMPETITION. PHOTOGRAPHY AT HOME.

**PRIZES FOR PAST WINNERS.**

One Gold, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal.

One Silver, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal.

One Bronze, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal.

**OPEN TO GENERAL COMPETITORS.**

Two AMATEUR PHOTOGRAPHER Gold Medals.

Two AMATEUR PHOTOGRAPHER Silver Medals.

Two AMATEUR PHOTOGRAPHER Bronze Medals.

Certificates will be placed at the disposal of the Judges should they see fit to award them.

**SUBJECTS.**

Any photographs are eligible which will come under the description of "Photography at Home"—portraits, figure studies, groups, tennis parties, etc.

Each competitor shall send in not less than four or more than eight photographs, and they will be judged upon their merits as a whole.

The prize pictures will remain the property of the Proprietors of the AMATEUR PHOTOGRAPHER, and for every photograph that it may be decided to reproduce in the "Photography at Home" Album (which will be published as soon after the announcement of the awards as possible) an unmounted print must be forwarded at once upon application.

No photographs that have been awarded the AMATEUR PHOTO-

GRAPHER medal, or obtained an award at any open competition or exhibition, will be eligible.

No name must appear on the face or back of the prints, but the title must be legibly written on the front of mount, together with the number referred to on the entry form. Prints may be by any process, or on any paper, and must be mounted.

All competitors will be required to sign a declaration that they are bona-fide amateur photographers, and that the whole of the work of the exposure, development, retouching (if any), printing, and toning has been done by them.

The competition is open to both ladies and gentlemen.

Each parcel must contain a stamped addressed envelope or label for the return of the photographs, otherwise they will be added to those collected for hospitals.

All Photographs must be endorsed "Photography at Home," and sent addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., on or before Tuesday, the 30th of June, 1891.

NOTE.—Entry Forms now ready. Send stamped addressed envelope endorsed "Competition."



# The AMATEUR PHOTOGRAPHER

Telephone N<sup>o</sup> 1645      Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 342. Vol. XIII.]

FRIDAY, APRIL 24, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.*

OUR VIEWS.—Glasgow Photographic Exhibition—1890 AMATEUR PHOTOGRAPHER Prize Slides—Photographic Portfolio Club—Gas Regulator Explosion—Home Portraiture—Quarterly Examination—Jena Glass—Crystal Palace Exhibition.

LEADER.—Home Portraiture.

LETTERS.—Answer to Query 4,617, Antwerp (Jack o' Lantern).

COMMUNICATED ARTICLES.—Additional Remarks on Photography without a Lens (Maskell)—The Construction and Use of Photographic Lenses (Leaper).

NOTES.—Thursday Evenings at the Camera Club—Edinburgh Centre—Liverpool Centre.

REVIEWS.—Die Osthoskiographische Photographie, Bemerkungen uber Misserfolge und deren Abhilfe und Sammlung von Recepten (David and Scolik).

CRYSTAL PALACE EXHIBITION.—Apparatus—Awards in the Art Division.

APPARATUS.—The Parallel Trimmer—Walking-Stick Stand—Wood's Improved Washer.

SOCIETIES' MEETINGS.—Brighton—Cornish—Croydon Micro—Devon and Cornwall—Ealing—Guildford—Holborn—Haresden—Ilkeston—Jersey—Lewisham—Manchester—Richmond—Stockton—Toynbee—Wakefield—Wigan—Woolwich.

WE have before referred to the Photographic Exhibition which is to be held in Glasgow in September under the auspices of the Glasgow and West of Scotland Amateur Photographic Association. We have now before us the prospectus. It is intended to open the Exhibition on the 1st of September, and for it to remain open until October 3rd. We note that although the Association has followed very closely upon the model of the prospectus issued by the promoters of the Liverpool Association, in one particular there is a very marked difference, viz., "No restrictions will be imposed as to the date of production, or as to previous exhibition of any picture." The conditions then provide that pictures which have gained first award in any class at any open exhibition can compete only in the Champion Class. We also note that "only medals from the die of the Association will be awarded, and no medals for advertising purposes will be accepted." Classes are reserved "open to professionals only," and to "amateurs only," in the following subjects: Portraits, whole-plate and over (set of four); Portraits, under whole-plate (set of six); Enlargement, any size, portrait only (one only); Enlargement, any size, other than portrait (one only); Lantern slides, any subject, professional (set of twelve), amateur (set of six). All other classes are open alike to professionals and amateurs, and include Landscape, Marine and clouds, Animals, Outdoor groups, Architecture, Interiors, Still life (flower studies, etc.), Flashlight, Instantaneous—in all the above subjects sets of four are to be entered. In Hand-camera, sets of twelve; Stereoscopic transparencies, sets of six. Genre—

groups or figure studies to form principal part of the picture—one only. Scientific, Microscopical, Astronomical, Geological, Botanical, Zoological, etc., not less than four photographs to be entered.

In all there are to be twenty-five classes, and in each class a silver and bronze medal will be placed at the disposal of the judges, as well as two gold medals to be awarded for special merit. In the Champion Class, open to professionals and amateurs, two gold medals will be given. In the Lady's Competition a silver and bronze medal will be given for the best set of four pictures, any size or subject.

The executive are very anxious to make a good show in the photo-mechanical section. Sets of six pictures must be sent in, and the name of process must be distinctly stated. It may be interesting to give the condition referring to the "production of picture;" except in Classes 1, 2, 3, 4, and 5, which are open to professionals only, the whole production of the picture—including exposure, development, retouching, printing, and toning—must be solely the work of the exhibitor. In Classes 1, 2, 3, 4, and 5 these operations may be the work of employes, but must be done on the exhibitor's own premises. All entry forms must be sent in on or before the 10th of August addressed to the Hon. Secretary, Mr. W. Goodwin, 3, Lynedoch Street, Glasgow.

The Exhibition will be held in the Institute of the Fine Arts, the finest suite of rooms in Glasgow. There is no doubt that the Exhibition will be a great success. Any of our readers wishing for prospectuses may send us a stamped and addressed envelope, and we shall be pleased to forward a copy.

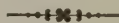
WE would remind our readers that the 1890 AMATEUR PHOTOGRAPHER Prize Slides will be shown at our offices, 1, Creed Lane, E.C., on Monday evening, the 27th inst., commencing at 7 p.m. Admission free on presentation of visiting card.

MR. F. G. READER, of 173, Hemingford Road, Barnsbury, N., asks us to state that he has vacancies for two members in the Photographic Portfolio Club, for which ladies and gentlemen are eligible.

WITH reference to the suggestion of Mr. Hodges that a committee should be formed to investigate the causes of the explosion of Mr. Brandreth's gas regulator, it is suggested that such meeting shall not be held for another month, in order that Mr. Brandreth, who is at present in America, may have the opportunity of attending. He is



very much interested in the matter, and, like ourselves, thinks that, for the safety of all lanternists, the cause should, if possible, be found out, and that it should be the subject of a most searching enquiry. We shall be glad to receive the names of any gentlemen who would be willing to meet and discuss the subject.



Our brief notes on "Home Portraiture" seem to have fairly caught on, we are pleased to see. On Monday afternoon last the influx of novices with questions and negatives was decidedly striking, and we have several letters this week from correspondents on the same subject, one suggesting that "your leader on 'Home Portraiture' is certainly an eye-opener." Our notes will be continued for some little time yet, and we shall be pleased to assist anyone by giving special directions as to the placing of sitters, etc., if they will forward us a plan of the room they propose to work, with dimensions of window, etc. Those of our readers who intend to enter the "Photography at Home" competition will perhaps obtain a few useful hints from the later articles.



THE gentleman who was successful in obtaining the third prize in our Quarterly Examination has intimated to us that he wishes to apply his prize in the purchase of some prisms of Jena glass, as he intends entering the interesting but rather laborious field of spectro-photography. He is the Hon. Sec. of the North Kent Amateur Photographic Society, and has for some time been anxious to enter the higher scientific branches of photography.



It is a little amusing to read the following note on Jena glass by a well-known photographic writer:—"Patents have been recently taken out by Drs. Abbé and D. Rudolph, of Jena, for the manufacture of a new glass for lens making. This new Jena glass, as it is called, has not yet been placed on the market, but lenses have already been made of it by English as well as foreign opticians." It would probably be of service to this writer if we inform him that this glass has been on the market since 1884, and since 1886 German opticians have manufactured lenses of it, and that we have had in our possession a price list with a sample of the glass since 1887. Drs. E. Abbé and D. Rudolph have merely patented special combinations of the new Jena glass, which give lenses far superior to the old ones. English manufacturers are naturally conservative, but they are slowly waking up to the fact "that this new Jena glass" which has been on the market since 1884 is a wonderful aid to them, and enables lenses to be devised much superior to the old glass. We shall presently have a note on this new glass, and hope to be able to show our readers practically the advantage of the new over the old.



THE explosion of the regulator referred to in our two last numbers is still occasioning considerable discussion, and several visitors have called to see the remains. The writers of most of the letters in last week's issue assume that the explosion occurred in the india-rubber regulator, whereas it appears to us that the explosion occurred first in the gun-metal connection above the bottle, and from there attacked the india-rubber. We may, of course, be wrong, but from the appearance of the relics this looks correct.



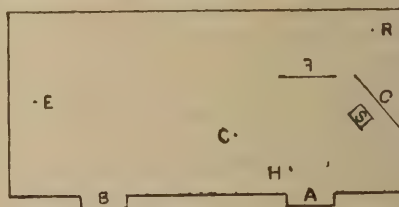
THE exhibition at the Crystal Palace is drawing large numbers of visitors, and Mr. Wollaston must be gratified to find that, notwithstanding somewhat adverse circumstances, it is such a success. The show of apparatus—which we

refer to at length on another page—is small in quantity, but excellent in quality, and includes all that the amateur wants, from the dark-room (Messrs. Houghton and Co.) to mounts for the finished prints, all the intermediate stages being well covered, the Platinotype Company even giving demonstrations of the hot-bath process. Amongst the pictures there are truly some which might have been relegated by their owners to the obscurity of a distant attic or elsewhere, but, on the other hand, the pictures which have received rewards (which we hope to refer to in detail next week) are in many cases pictures in the true sense of the word, and all give evidence of much care, skill, and artistic taste. The lantern shows have drawn large audiences, and the slides were on the whole very good, and the exhibition generally will, we think, hold its own with any of its predecessors.



### HOME PORTRAITURE.

EVERY amateur who wants to start portraiture will generally place his sitter as close as possible to the window, and is astonished to find on developing his plate that he has obtained a wonderful and fearful hybrid, with one side of the face black and the other white. To such a novice we propound the startling theory that the further he puts his sitter away from the window the softer and more harmonious the lighting and the better the results obtained. If he does not believe this, let him set to work to prove it optically and practically on himself, for which purpose all that is necessary is a decent-sized hand-glass or mirror, a chair, and the would-be operator. Now let him seat himself in the chair close to the window and hold the glass so that he can see his face plainly, and yet so that the glass shall not cast the reflection of the light on to the face, and he will find that one side of his face is brightly illuminated, but the other has a heavy black nose shadow, and the one ear is hardly to be seen. Now let the chair be moved back from the window about five or six feet, and the same operation be gone through, when it will be seen that there is less contrast between the light and shade, and we know we can further reduce this contrast by the use of reflectors. More is to be learnt by thus figuring about and admiring yourself and features in various attitudes and positions as regards the window than any amount of reading how to do it; but still, for the instruction of those who like everything illustrated, the following diagram, taken from the *Dictionary of Photography*, will be of some assistance.



A and B are two windows; B should be blocked out entirely by blinds or curtains, etc. The softest and most harmonious lighting may be got by placing the sitter about S, and the camera placed about C or H, according to whether profile or full face be required. For full lengths the camera will have to be placed about E.

Now for a few general hints on lighting, etc. Never put your sitter at F, in the above diagram, or directly opposite the window and the camera in the window recess: full-front lighting makes any face look like a plain, flat piece; there is no relief, no roundness, no shadow. Another important point is the character of the face, and the way this can be



altered by varying the position of the camera and lens. Let us take, for instance, a long, thin, cadaverous face, with abnormally long upper lip, and sharply-defined septum of the nose, with rather receding nostrils. Now let us place the lens level with the nose, and what do we see? Why, the lip and nostril natural, it is true, but too long and too prominent. Placing the lens so as to slightly look down on the nose and lip reduces these to pleasing proportions, whilst if we place the lens level with the breast, so as to look up to the nose and lip, the abnormal length is intensified. We might go on multiplying instances in this fashion, but must leave the operator to find these things out for himself.

Some people, especially those who do much head work or who have experienced great troubles or worry, have very marked furrows or furrow at the root of the nose between the eyebrows, and on either side a protuberance more or less marked, which give great character to the face, and which the possessors are sometimes very proud of. The face should be so lighted that these, or at least one, is distinctly visible, and a very good position is the profile just showing a little of the further eye. Another important point to be considered is the presence of scars, moles, and other marks; when these are present, it is of course absolutely necessary to take the other side of the face, unless, in the case of a fair sitter, when sometimes a small mole or beauty spot is very effective, giving piquancy to the face. A very good example of the effectiveness of a mole is to be seen in the frontispiece of the *Photographic Reporter* for February last, "My Sister," by F. W. Smedley, as fine a piece of artistic work as ever turned out by amateur or professional. All professional photographers and all authorities upon portraiture state that one side of the human face is better or more perfect than the other. Thus H. P. Robinson, the best known authority, in his excellent little book, "The Studio, and What to Do in it," p. 50, says, "The first thing to decide when you see your sitter should be, 'Which side of his face will make the best picture?' This consideration seldom gives an experienced operator any trouble. To one who is in the habit of observing, the sides of every face differ so much and in such a definite manner, that a glance is all that is necessary to settle the question; but the young photographer will want to know how to select and have some rule for the selection. If you will look critically at a full face (or the photograph of a full face would be better, as it would enable you to measure), you will find that the eyes are not level—one is higher than the other. This is almost invariable, and is one of the peculiar instances in which nature insists on variety, even where uniformity would seem to be proper. . . . I keep an illustrated catalogue of all the portraits I take, and on looking through several volumes . . . I found that about four out of five of the portraits were taken looking to the right, showing that I had in these instances chosen the left side as the best."

## Letters to the Editor.

### ANSWER TO QUERY 4,617—ANTWERP.

SIR,—Leaving Leeds yesterday for this place, I bought a copy of the *AMATEUR PHOTOGRAPHER* to read in the train, and found the inquiry of "Woodpecker" about Antwerp and the Hague. He can make a delightful round trip through these and other Dutch and Belgian cities in ten days, with one of the very cheap round trip tickets sold by the Great Eastern Railway Company, and will find all necessary information in the guide books published by that company. I usually stay at the Hotel de Hollande in Antwerp. The proprietor speaks English well, and my expenses there never exceeded 8s. a day. A man who knows the country well would do best to travel independently, as I have done for

thirty years; but for a ten days' tour with a view to using the camera, the tour Harwich, Antwerp, Brussels, Rotterdam, the Hague, Amsterdam, and back, by a Great Eastern Railway ticket, would be as much as could be managed. I found here a nice dark-room and large supply of English dry plates with Mr. Van Neck, Klapdorf, who also speaks English well. But for so short a tour it would be most convenient to bring all the photographic supplies needed from England, where I have found everything relating to photography cheaper and better than either in America or on the Continent of Europe. For lantern slides which cost me 1s. a dozen in England I have paid 1s. 9d. in Berlin and 3s. in San Francisco, and for Ilford dry plates 8 by 16 c.m., for stereoscopic purposes, I paid to-day 4½ francs or 3s. 7d. per dozen. In Berlin the same quality of German make cost me 2s. 7d. Goods of undoubtedly high quality—like, for instance, the excellent cameras of Dr. Krugener, of Frankfort—are quite as expensive as in England, and the cheap goods are "nasty."—Yours truly,

JACK O'LANTERN.

Antwerp, April 18th, 1891.



**Wakefield.**—On the 15th inst. the first meeting of the above newly-formed Society was held in the Old Town Hall, when an exhibition of lantern slides was given. Upwards of 140 members and friends were present. Mr. A. W. Stanfield, J.P., the President, explained the objects of the Society, and said he thought ladies as well as gentlemen should learn the art of photography. Fully 200 slides, lent by the Editor of the *AMATEUR PHOTOGRAPHER*, Captain Norwood, and Messrs. Hall, Eldridge, Webster, G. Parkin, H. A. Halliwell, Campbell, Day, and H. Parkin, were thrown upon the screen. The lantern was the property of Mr. Eldridge, and was manipulated by him in conjunction with Mr. Webster. The pictures, which included many local views, were much admired. The Editor of the *AMATEUR PHOTOGRAPHER* sent with the slides a collection of competition prints, and a special meeting was devoted to them on the night following, the members evincing great interest in the capital work so kindly sent for their inspection. The next meeting will be on May 12th, at 8 p.m., in the Market Cocoa Tavern.

**Woolwich.**—The first annual general meeting was held on the 9th inst. Mr. Harbour in the chair, and upwards of twenty members being present. In consequence of the rooms at present occupied being required by the Y.M.C.A., it was decided to hold the meetings in future at the schools adjoining Rectory Place Congregational Church, Woolwich, and to change the day of meeting from Thursday to Tuesday, the first evening in the new quarters being May 12th, when it was decided to hold an exhibition of members' work. The following officers were elected for 1891-2: President, Rev. J. W. Horsley; Vice-Presidents, Messrs. Harbour and Calder. Council: Messrs. Ince, Southin, Kemp, Aspinall, and Cregan. Hon. Secretary, Mr. G. K. Harris; Hon. Treasurer, Mr. Desforges; Auditors, Messrs. Brandon and Dering. Messrs. Hammant and Lumley were elected members. The Hon. Secretary then read the financial statement for the year, which showed a balance in favour of the Society of £1 3s. 11½d., which he considered very good when taking into account the various difficulties they had had to contend with. Arrangements were then made for the first outing on May 16th.

**Wigan.**—At the meeting on the 16th inst., the President (Rev. G. F. Wills) read a paper and gave a demonstration on the "Production of Lantern Slides by Reduction and Contact." The making of slides by contact with the negative was first dealt with, each operation being described in a very exhaustive manner. In dealing with reduction slides, the lecturer introduced to the notice of the members the apparatus made and used by himself, which is very simple; a few pence would cover the cost of the apparatus, excluding the camera and lens. It is made to screw on to the tripod, and may be pointed to the sky or any other position desirable, every necessary movement of the negative being provided for. After dilating upon the merits and demerits of the various brands of transparency plates, the lecturer gave a list of all the best known developing formulae, pointing out which he considered the best, and why. At this point several plates were exposed behind a negative, and developed with different developers by several members, the results obtained being afterwards compared, the general opinion being that the plates used (Thomas's) gave the best results with their own hydroquinone formula. It has been decided to form a lending library in connection with the Society. The books will be loaned to the committee by the members, and will remain the property of the latter, so that they may be withdrawn at any time. By this means the members will have most of the best works on photography at their disposal, without the expense of purchase, and without any outlay on the part of the Society. Already about thirty books have been promised, including all the standard works on the art-science.



## Additional Remarks on Photography Without a Lens.

BY ALFRED MASKELL.

PHOTOGRAPHY without a lens or, as it is popularly known, *pinhole* photography is a branch of the art which I think interests a sufficient number of people to warrant a few additional remarks being made to my paper in the *Photographic Quarterly* of October last. Although at present the examples which we meet with at exhibitions are contributed by one or two only, I know that many others are impressed with the merits of this method, and are working steadily in the same direction. I propose in this paper to give shortly some practical hints regarding the best way of working, more especially as to apparatus, quality of definition and duration of exposures.

*The Pinhole Plate.*—Various makeshifts will readily suggest themselves for the construction of the plate which carries the necessary aperture, but when we consider that the accurate piercing of this opening and the relation which it should bear to the focal length employed have an important bearing on the results obtained, it is undoubtedly convenient, if not indispensable, that this portion of our simple apparatus should be constructed in the best possible manner.

The most handy form of instrument for the purpose which I have come across has been brought out by MM. Deshors and Deslandres of Paris, and may shortly be described as follows. In the back view (fig. 1) we have a circular metal plate pierced with six apertures, viz.,  $\frac{1}{16}$ ,  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and  $\frac{1}{2}$  millimetre in diameter (corresponding, roughly to  $\frac{1}{16}$ ,  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and  $\frac{1}{2}$  of an inch). Any one of these apertures is brought by the milled head A (fig. 2) to the opening B, above which appears at the same time in the opening C the fraction denoting the size of aperture in use. The square metal plate is easily adapted to the square lens holder with which cameras are usually furnished. The

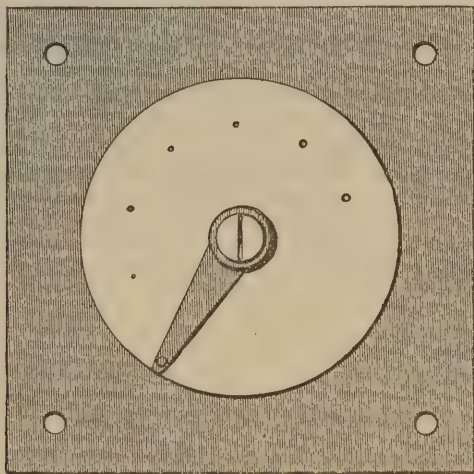


FIG. 1.

apparatus appears to me to answer all requirements, except that of view finding, for which an addition, I think, could be made which I shall presently suggest.

I have already mentioned (*Photographic Quarterly*) that the diameters of the apertures to be employed vary according to their distance from the sensitive plate or, as we may call it, according to the focal distance, and I gave then a table showing a certain number of convenient distances and apertures. It may be as well to add that the theoretical rule upon which that table is based is as follows:—To obtain

the diameter of aperture to be employed which shall give the best definition possible, multiply the square root of the focal distance to be used by  $\cdot 008$ . Thus, at a focal distance of 25 inches,  $\cdot 008 \times 5 = \frac{1}{125} = \frac{1}{125}$  in. as the proper diameter of the aperture. I have no intention of entering into the abstruse calculations bearing upon this important part of our subject which have been given to us by Lord Rayleigh and by Captain Abney. But I am bound to say that while I accept the theory I cannot absolutely reconcile it with

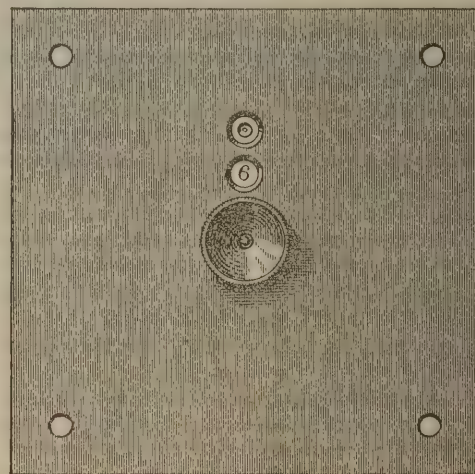


FIG. 2.

practice, so far at least as my own practice is concerned. As I understand the papers contributed by these two eminent men of science, the conclusions arrived at vary considerably. Lord Rayleigh finds that the retardation from the centre to the margin of a pinhole should be taken as  $\frac{1}{4}$  of a wave length, whereas Captain Abney gives it as  $\frac{1}{2}$  a wave length  $\lambda$ , consequently doubling the necessary diameter of the aperture in relation to the focal length. I should not presume to offer an opinion upon a matter upon which scientifically I know so little. The question of extremely small or comparatively very large apertures no doubt affects the manner in which the theories are to be applied; but so far as I have been able to form a practical judgment from the exposures which I have made, I cannot say that I am convinced either that the application of the rule stated just now gives the greatest possible amount of definition, or that if the theoretical diameter is exceeded on either side very much less defined results will follow. What are scientifically called discs of confusion may not, however, pictorially speaking, have a corresponding meaning, and it may be useful to refer to Captain Abney's paper, read before the Camera Club (*Cam. Club Journal*, June, 1890), where he says that to use a pinhole much smaller than that which should give the sharpest results, produces much greater gradation, and if much larger makes it what may be called lumpy. I may perhaps be permitted to refer, as illustrations, to two pictures of mine at present in the Camera Club Exhibition, and to the etched plate in the *Photographic Quarterly* for October, 1890. The last-named was taken with an aperture in tinfoil, which I have not been able to measure accurately, but which is certainly not greater than  $\frac{1}{16}$  in., and a focal length of 9 inches. The river view at the Club (exhibited from a technical, rather than artistic standpoint) was taken with the same aperture and a focal length of 14 inches, and in both the definition is extremely fine. For the larger picture at the Club, "Landscape, with reeds and rushes," the focal length was 25 inches, and the aperture according to the rule above stated, viz.,  $\frac{1}{125}$  in., the definition in this case



not being by any means so great, although to my mind preferable, and for that reason I am satisfied to adopt this standard.

*View Finding.*—In the *Photographic Quarterly* I referred to several methods of determining the field of view which would be given on the sensitive plate, many of which have, however, their inconveniences and drawbacks in practical working. For instance, if the camera is swung round, and the eye applied to the pinhole aperture, it is necessary that the camera should be perfectly level; if not so, the results will not correspond. Again, many will prefer to see the view on a large scale on the ground-glass screen of the camera, instead of using a small camera-obscura. I have found it, therefore, more convenient to carry two or three common spectacle lenses, which can be got for a few pence, adapted to the focal lengths I usually employ, and stopped down if necessary to say  $\frac{f}{32}$ . They can easily be fixed into similar square fronts to that which carries the pinhole plate, and are lighter and more portable than an ordinary lens with its mount. I think, however, that if the instrument previously referred to were pierced with, say, three  $\frac{1}{2}$ -inch apertures, and behind these three spectacle lenses of 9, 16, and 25 inches were cemented and the aperture C (fig. 2) made  $\frac{1}{2}$ -in. in diameter, every required purpose of view finding would be conveniently fulfilled.

*Exposure.*—The question of exposure is undoubtedly one which individual experience will best arrive at settling satisfactorily. It may, however, be an assistance to many if I subjoin a few simple calculations as an aid to forming general conclusions, and give a table applicable, under certain conditions, to the brightest month of the year. At the same time I should wish them to be taken rather as sufficiently approximate for practical purposes than as theoretically accurate from every scientific point of view.

Supposing that an aperture of  $\frac{1}{16}$  in., with a focal length of one inch, requires an exposure of one second, what is the exposure required for an aperture of  $\frac{1}{32}$  in. with a focal length of 16 inches?

1. First find the exposure required with the same aperture ( $\frac{1}{16}$  in.) and focal length of 16 inches. The intensity of light being inversely proportionate to the square of the distance

$$1^2 : 16^2 :: 1 : 256$$

The exposure will be, therefore, 256 times as long, that is, 256 seconds.

Next as to aperture of  $\frac{1}{32}$  instead of  $\frac{1}{16}$  of an inch.

2. The amount of light transmitted being proportionate to the area of the aperture, or to the square of the diameter.

$$\frac{1}{16} : \frac{1}{32} :: 2560 \text{ secs.} : x = 23 \text{ secs.}$$

An exposure of 23 seconds would, therefore, be required under the conditions first stated above.

If an aperture one inch in diameter ( $f/25$  for a focal length of 25 inches) requires an exposure of one second at mid-day in June, sun shining, what exposure is required under the same other conditions except the aperture, which is to be  $\frac{1}{32}$  in.? Then

$$\frac{1}{25} : 1 :: 1 \text{ sec.} : x = 625 \text{ secs.} = 10 \text{ min. } 25 \text{ secs.}$$

From the above data and the usual relative proportional exposures to the strength of light, I have therefore constructed the Table (given in next column) of Exposures without lens for the month of June:—

Similar tables can easily be compiled in the same manner for other months of the year. The usual exposure tables generally allow for other conditions of light, termed sun-obscured, cloudy, very dull, gloomy and so on, but these are, to say the least of it, extremely arbitrary distinctions. The only reliable method is the actinometer, and taking ten

seconds of Stanley's actinometer as the standard, equivalent for bright sunshine at midday in June, I should double the exposure in table for 20 sec., treble for 30 sec., and

TABLE OF EXPOSURES WITHOUT LENS FOR THE MONTH OF JUNE.

Focal Length.	Aper- ture.	Morning 4 Evening 8	hours 5 hours 7	6	7	8	5, 10, 11, 12, 3, 2, 1, 12.
4 inches	$\frac{1}{16}$ inch	—	7' 30"	3' 45"	3' 00"	2' 00"	1' 30"
9 "	$\frac{1}{32}$ "	29' 24"	14' 42"	7' 21"	5' 53"	3' 40"	2' 56"
16 "	$\frac{1}{64}$ "	62' 00"	26' 15"	15' 00"	11' 15"	7' 36"	5' 40"
25 "	$\frac{1}{128}$ "	135' 25"	52' 05"	27' 20"	22' 08"	19' 45"	10' 25"

Conditions—Bright sunshine, 30 times plates. Seconds may practically be neglected, or the full minute completed.

so on. Those who do not use the actinometer may be guided by the usual instructions of exposure books, viz., sun-obscured, double; cloudy, treble; very dull, four times; and gloomy, five times the exposures of tables constructed as above. As in all other work, however, judgment must be used and allowances made. For instance, it is evident that for the very long exposures when day is waning, considerable allowance must be made. Few, however, will often commence exposure after four or five p.m. For early morning exposures, when light is waxing stronger, it will not be necessary to take this into consideration. A great point to remember is always to give sufficient exposure. As with interiors, one is not likely to err on the side of over-exposure, when long exposures are given. If exposures are to be fifteen or thirty minutes, it can scarcely make any practical difference to prolong them to twenty or forty minutes respectively. For the shorter exposures less latitude is necessarily allowable.

In concluding, I should like to correct a misapprehension which I think exists with regard to photography without a lens in the minds of those who have not seen many examples of the work produced, and who may have been guided by the hysterical outbursts of denunciation which have so frequently appeared in print. I wish to uphold that, with a pinhole, definition sufficient to satisfy any demand, pictorially considered, may be obtained; in fact that the definition may be too great, and that in some exhibited pictures it has purposely been made less intense than the method could, if it had been so desired, have produced. Pinhole-work does not, therefore, necessarily imply what has been called *fuzziness*. The real and legitimate point at issue is purely a question of taste; it is simply whether uniform diffusion is artistic. On this point I myself am perfectly satisfied, and I have not yet seen results produced by other methods of altering the definition in various planes, or of producing uniform softness, which can compare with the discarding of the lens. They may, and it is to be hoped, will come some day, for the great drawback we have to encounter is undoubtedly the necessity of prolonged exposures; not because we should consider time itself as of consequence in the production of a work of art, but because it often is the cause of limiting our choice of subject and opportunities of work.

**Guildford.**—At the last ordinary monthly meeting (Mr. A. E. Crowe in the chair), held on the 14th inst., Mr. J. Russell read a very interesting and instructive paper on "Lantern Slides." He closed his remarks by throwing on the screen a number of slides made by himself and others, pointing out the different tones attainable, what to avoid, etc.



## The Construction and Use of Photographic Lenses.

BY CLEMENT J. LEAPER, F.C.S.,

Instructor in Photography, City of Dublin Technical Schools.

### CHAPTER IV.—(Continued.)

#### TYPICAL PHOTOGRAPHIC LENSES.

*The Orthoscopic Lens.*—This lens depends (fig. 18) for its construction upon the fact that a negative lens placed behind an achromatic lens, say the front lens of a Petzval portrait combination, will increase the extent of surface covered by the latter, and at the same time render the field much flatter than before. The negative lens consists of a biconcave flint, and a converging meniscus, also of flint, touching at the edges only.

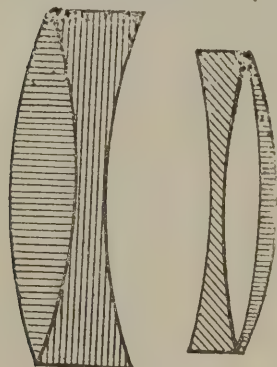


Fig. 18.

they have been gradually replaced by other types.

*The Triplet.*—Although to a great extent supplanted by other lenses, the triplet is interesting as being the first non-distorting lens made. It consists of a pair of achromatic combinations (fig. 19) with a meniscus of small diameter and long focus placed between them. The following data enable a 10-inch focus lens of this type to be constructed:—

#### Front Lens.

Diameter, 1.714 in.

Radii of curvature	Biconvex crown	+ 3.128 in.
		+ 2.386 "
	Biconcave flint	- 2.386 "
		- 20.228 "

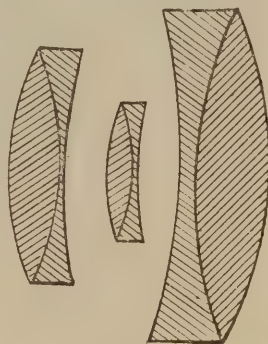


Fig. 19.

#### Middle Lens.

Diameter, 1.071 in.

Radii of curvature	Biconvex crown	+ 14.200 in.
		+ 4.528 "
	Biconcave flint	- 4.528 "
		- 3.200 "

#### Back Lens.

Diameter, 2.286 in.

Radii of curvature	Biconcave flint	- 30.3 in.
		- 3.557 "
	Biconvex crown	+ 3.557 "
		+ 4.728 "

Distance from front to back combination, 1.257 in.

Distance from front to middle lens, .955 in.

Indices of refraction, crown, 1.521; flint, 1.593.

*The Antiplanetic Lens.*—As made by Steinheil for portraits. This consists (fig. 20) of three lenses, the front one an achromatic combination of the usual form, the central lens a simple biconcave flint, and the back lens a simple biconvex crown. The combination works at about the same aperture as a portrait lens of the Petzval type (fig. 22), but possess a much greater depth of definition.

The following data will enable a lens of this type of 9½ in. focus to be constructed:—

#### Front Lens.

Diameter, 3 in.

Radii of curvature	Biconvex crown, thickness	+ 2.844 in.	Refractive Index.
		+ 9.488 "	
	Biconcave flint, thickness	- 9.488 "	
		- 22.063 "	1.577

#### Middle Flint Lens.

Diameter, 2 in.

Radii of curvature, - 5.551 in., - 2.437 in.

#### Back Crown Lens.

Diameter, 2½ in.

Radii of curvature, + 4.324 in., + 3.752 in.

Distance from front to middle lens, 1.051 in.

Distance from middle to back lens, .616 in.

As made by Stenheil, the series includes four lens having foci from 1¼ in. to 22 in., and covering from locket to promenade size.

Another type of lens of the same name is also (fig. 21) made by Steinheil. In this case the front combination consists of a biconvex flint cemented to a biconcave crown, and the back combination of a biconcave flint cemented to a very thick biconvex crown.

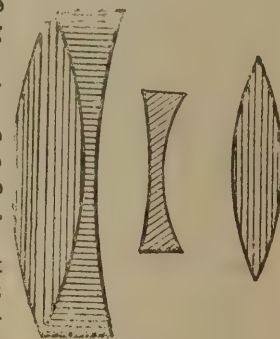


Fig. 20.

The following are the data employed in the construction of a lens of this type of 9½ in. focus, the glass being the same as that used in the portrait antiplanetic:—

#### Front Lens.

Radii of curvature	Biconvex flint, thickness .193 in.	+ 2.519 in.
		+ 11.299 "
	Biconcave crown, thickness .161 in.	- 11.299 "
		- 3.874 "

#### Back Lens.

Radii of curvature	Biconcave flint, thickness .134 in.	- 3.874 in.
		- 1.355 "
	Biconvex crown, thickness .967 in.	+ 1.355 "
		+ 2.835 "

*The Petzval Portrait Lens.*—This consists (fig. 22) of a cemented achromatic plano-convex or concavo-convex lens forming the front combination used in conjunction with a diverging flint meniscus at a slight distance in front of a biconvex crown.

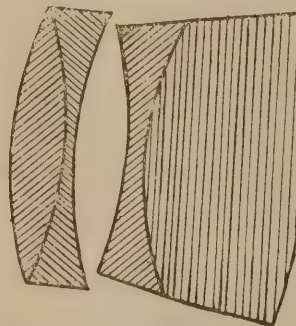


Fig. 21.

The front combination gives an image free from spherical and chromatic aberration along the axis, but of limited area, as the marginal rays are practically uncorrected. The back lenses lengthen the focal distance and reduce astigmatism to a minimum, whilst the diverging meniscus, forming portion of the back combination, renders the field very flat. To equalise the illumination, the front lens is of slightly smaller diameter than the back one.

Such a lens may be employed full aperture, but the circle of definition does not, under such circumstances, exceed one quarter the focal length of the lens.



By stopping down to  $f/10$  the circle increases to half the focal length, and by reducing the aperture to  $f/25$ , it becomes equal to the focal length.

The following data will enable a half-plate lens of this type to be constructed.

## Front Lens.

Diameter, 2.5 in.			Index of re- fraction.
Radii of curva- ture	Biconvex crown	{ + 5.566 in. }	1.524
		{ + 4.755 " }	
	Biconcave flint	{ - 4.755 " }	1.603
		{ - 6.255 " }	

## Back Lens.

Diameter, 2.75 in.			Index of re- fraction.
Radii of curva- ture	Diverging meniscus	{ + 9.1 in.	1.574
	of light flint	{ - 3.8 "	
	Biconvex crown	{ + 16.333 "	1.524
		{ + 5.000 "	

Distance between lenses of back combination, .065 in.

Distance between front and back combinations, 4 in.

Dallmeyer's lenses of the Petzval type include two series: an extra rapid one including four lenses, viz., 2 C and 3 C for cartes, and a miniature and medallion lens for portraits of smaller dimensions, and a series of ordinary rapidity, including three lenses, 1 B, 2 B, and 3 B for cartes only.

The following are the data employed in constructing one of these lenses expressed as

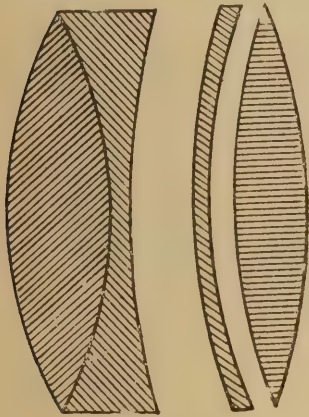


Fig. 22.

ratio of the focal length of the combination taken as 10:

Focal length of combination, 10.

## Front Lens.

Diameter, 2.977 in.		
Radii of curvature	Biconvex crown	$\left\{ \begin{array}{l} + 5.585 \text{ in.} \\ + 4.755 \text{ " } \end{array} \right\}$
	Biconcave flint	$\left\{ \begin{array}{l} - 3.701 \text{ " } \\ - 102.662 \text{ " } \end{array} \right\}$

## Back Lens.

Diameter, 3.517 in.		
Radii of curvature	Diverging meniscus of flint	$\left\{ \begin{array}{l} + 13.030 \\ - 5.844 \end{array} \right\}$
	Biconvex crown	$\left\{ \begin{array}{l} + 10.195 \\ + 10.195 \end{array} \right\}$

Distance between lenses of back combination, .037.

Distance between front and back combination, 2.424.

Voigtlander adopts different data in the construction of these lenses, which are subjoined for comparison:

Focal length of combination, 10.

## Front Lens.

Diameter, 3.000 in.			Index of R. fraction.		
Radii of curva- ture	{	Biconvex crown	{ + 5.454	1.536	
			{ + 4.318		
		{	Biconcave flint	{ - 4.318	1.602
				{ - 54.545	

## Back Lens.

Diameter, 3.250 in.			Index of re- fraction.		
Radii of curva- ture	{	Diverging flint meniscus	{ + 10.909	1.602	
			{ - 3.833		
		{	Biconvex crown	{ + 4.742	1.536
				{ + 16.366	

Dallmeyer also constructs lenses of this type in which means is afforded of varying the depth of definition at will. The front lens in this case (fig. 23) is practically the same as before, but the back combination is made up of a converging crown meniscus, associated with a diverging flint meniscus, the distance between these latter lens being capable of alteration to suit the depth of definition required.

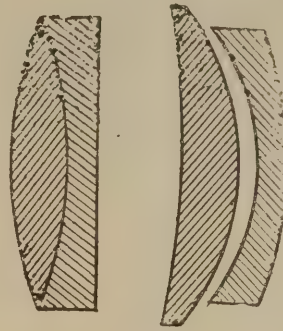


Fig. 23.

Three series of these lenses are made by Dallmeyer, viz., A, B, and D. Of these the B

lenses are for cartes and cabinets, the A lenses for portraits up to  $20 \times 16$  inches, and the D lens for portraits and views. The B series includes the most rapid, and the D series the least rapid lenses, the A lenses occupying an intermediate position.

## Thursday Evenings at the Camera Club.

(BY ONE OF OUR STAFF.)

DR. C. S. PATTERSON presided at the meeting on the 16th inst., when there was a good attendance of members to hear Mr. J. Howson deliver himself on "Conventionalism in Colour." Previous to the reading of the paper, however, the Hon. Sec. handed round some early prints, sent by Messrs. Marion and Co., from the flash-light negatives taken the previous week; also one of Manson's focussing cloths, which are made in convenient form for covering the whole of the camera. Dr. Patterson showed a Bain's mask-cutter.

Mr. Howson spoke at some length, and in the course of his remarks he said that years ago photographers were confined to the warm colours of untuned silver prints, and the crudeness and sameness of these led workers to seek a means of subduing and altering them, and gold toning resulted. Following this came the period of the toned purple print, and then the cold grey or black tones of the platinum prints reigned supreme. That any one method or colour is the one and only means to be used in reproducing our pictures, any thoughtful mind would readily deny. Surely we had within our grasp, out of the several methods possible, a varied media for indicating or harmonising with the landscape we desire to portray. Why should we not use them? Why should not the beauty of each 'scape, whether of sea or land, not be portrayed in a print which was to some extent in harmony with the subject, or the special aspect under which that subject was seen. Why should it be conventional and necessary to depict a glorious sunrise, a broad, bright noonday scene of purple moorland, the sparkling ripple of a summer sea, and the fading dusk of a sunless eve, alike in the one dull monotony of funeral black, in cold purple, or in any single shade of red or brown. Apart from fashion, which may be considered as utterly unreliable, there were only individual taste and the adaptability to subject to fall back on, and these are the two points he urged. Whilst silver printing, as such, was defended, it could not but be confessed that, with albumen as a vehicle, it deserved many of the hard things said of it. The advantages offered by Alpha and gelatino-chloride papers were, first of all, permanency, which was fairly well established, and possibility, of colour and surface. We had, in surface, choice of ordinary matt or enamelled, by simple means which it was unnecessary to name. It might be well to point out the partial fallacy of another fashionable dictum. That highly-glazed surfaces were inartistic was surely a matter of debate. We admired, with good reason, the enamel miniatures of a past age, and there should be no less to admire in an enamelled picture of some subjects. If the gloss was the sole or primary attribute of the picture, it might be condemned; but if only secondary, and the picture was good in itself, then there could



not be any valid objection made to it. There could be no universal rule either of praise or blame. Thus much for surface. In colour we had a much wider scope. In conclusion, he contended that the photographer should endeavour to find the salient tint in a landscape, and then try to reproduce it in his print, the result of which would be that the print would convey a more correct idea of the scene. Mr. H. Hinton was all on the other side, and would not admit that there was any such thing as conventionalism in colour, holding that all colours had been used, from warm browns to greys and blacks.

Mr. Davison agreed with the reader that they should pay more attention to varying the monochrome tint of their pictures according to the subject; but then, as would probably strike anyone considering the subject, he pointed out that it was a difficult matter to decide what was the salient tint of a view. Platinum had taken a great hold, but that was not because of the grey or black tone, but because of the matt surface, and there had been as much of the warm-colour platinum worked as of the cold. There were certain surfaces which for artistic purposes they must decide never to use; that was the surface of the high detail-giving papers (gelatino-chloride), which were, however, admirable for scientific work, but they gave heavier shadows than platinum, and that was against them. There was, too, an absolute objection to the glazed surface, which gave disturbing reflections. It was true that platinum prints were put under glass, but that was compulsory; the prints looked far better without it. Mr. Gale expressed the opinion that these points were all matters of fashion. Thirty years ago they used rough paper; then came albumen paper, and now they were going back to rough surfaces. Mr. Bright said a word in defence of bromide, which he said was simple and extremely convenient, and suited some subjects better than any other process.

The proceedings terminated with a vote of thanks to the reader.

On Monday, the 13th, there was a special lantern evening at the Club, and one of the largest and most interesting collections of slides ever shown at the Club was brought together by members and friends.

The extra meeting was appointed for the purpose of working off the arrears into which the lantern exhibition had fallen owing to the period of removal into the new premises. Over 400 slides were shown (almost all new at the Club), the work of Messrs. Gibbons, Jones, Elder, d'Arcis, Noel-Cox, Carpenter, Bennet, Lawford, Laurie, Maskell, Mathews, Bright, Hughes, H. M. Hastings, Andreæ, Huskisson, Burton, Cembrano, Seyd, Chang, and Fitz-Payne.

On Thursday, April 30th, Mr. J. Traill Taylor will read a paper on "Lantern Optics."

## Reviews.

*Die Orthoskiagraphische Photographie, Bemerkungen über Misserfolge und deren Abhilfe und Sammlung von Rezepten.* By Ludwig David and Charles Scolik. Published by Wilhelm Knapp, Halle-a-S. Price 6s.

The above work forms vol. ii. of David and Scolik's work on Photography with Gelatino-bromide of Silver, and, under the new and certainly not euphonious term "orthoskiagraphic," treats of colour-sensitive or orthochromatic photography. A brief historical introduction, a consideration of the most suitable emulsion, the chemical properties and composition of the dyes used, introduce us into the practical portion of the work, and plain and practical directions are given for the preparation of colour-sensitive plates.

The authors include the results of their own experience and that of the leading authorities, and finally come to the conclusion that ready-prepared plates bathed in an ammoniacal solution of the dye are more sensitive generally and more sensitive to colour than plates dyed in the emulsion making, the only disadvantage being that they have not quite such great keeping powers. A good resumé of the use of the yellow screen follows, and we have here two collotypes of a landscape, one taken with an ordinary plate, the other with a colour-sensitive plate with a yellow screen. In our opinion, although the difference is most marked, a much more pleasing result would have been obtained had the yellow screen been omitted, as it has acted in such a manner as to destroy to a great extent the effect of distance. Practical hints upon the

application of colour-sensitive plates to every-day work follow, and a coloured chart is given with collotypes from ordinary and orthoskiagraphic plates, and also one showing the use of the screen. We have personally tried this chart, and find that for comparative work it is almost valueless, as the colours are by no means intense enough to prevent the action of the white paper. There is also one important point to be remembered in orthochromatic photography, and that is that the behaviour of, or sensitiveness of, a plate to pigments is of little, if any, value for estimating the sensitiveness of that plate to solar light as reflected from natural objects. A coloured chart of the solar spectrum, and collotypes of some of Schumann's results when working with colour-sensitive plates in the spectroscope, are also given. The latter part of the book is not the least valuable. Failures and their remedies are well and practically treated, and the collection of receipts is good, and does not contain too many old "chestnuts." The authors have done their work well, and have succeeded in giving us a practical handbook without loading it with theory. A very good photogravure of the Archduchess of Austria is also given as a frontispiece.

## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

FRIDAY was graduation day in Edinburgh University, when a large number of young gentlemen received their M.A. and other degrees, the ceremony in connection with which consists of their being capped with a rather peculiar looking piece of tailoring, which is reported to have been made out of the knee breeches of George Buchanan, the popular Scottish courtier and wit. The graduates appear in robes, and the ceremony over, there is a rush to the studios to have themselves photographed in them before the hired garments require to be returned. Quite a battalion of them might have been seen wending their way across the meadows to North Bruntsfield Place, where Mr. Alex. Ayton's studio is situated. Mr. Ayton is very popular among the students, being, on account of his excellent grouping talent, almost universally employed to photograph them in classes during the session. On Friday afternoon he had several hours' hard work with the camera, upon the graduates, whom he found to be most agreeable sitters.

The ladies have no status in Edinburgh University as yet, but they are hopeful that in the near future they will be permitted to take degrees within its walls. In the meantime, and for the past twenty-four years, they have conducted on their own account a school in which a university education is given to women. Their "graduation" day was also Friday, and at it Professor Copeland, Astronomer Royal for Scotland, in illustration of the value of the higher education of women, stated that at present a series of Photographs of the heavens are being taken in Peru, and that these are forwarded to Cambridge, U.S., where a staff of women, working under the direction of Miss Fleming, pass them under the microscope, and arrange and classify the stars and other bodies. The work is excellently done, and the results are published, month by month, in strictly scientific astronomical publications. Curiously enough, astronomers in the United Kingdom usually get their first sight of these publications in German journals.

The law as to the liability of railway companies for breakages in transit was exemplified by an action which was before the Edinburgh Sheriff Small Debt Court on Wednesday 15th inst. The pursuers, Messrs. M. and J. Scott, photographic artists, 36, George Street, Edinburgh, sued the Caledonian Railway Company for £4 19s. 6d., the value of a picture frame which, they said, was seriously damaged while being conveyed by the railway company from Aberdeen to Edinburgh in December last. Liability having been denied by the defenders, evidence was led, from which it appeared that the case containing the frame was regarded as an "empty," and that when it was delivered to the pursuers, they signed for it as in good order, but that four days later it was opened, and that then the damaged frame was discovered within it. Sheriff Rutherford said that the fact of the pursuers having accepted the case as in good order did not preclude them from raising the present action. On the ground that the pursuers had proved that the frame was not damaged after it came into their hands, while the defenders had not proved that the damage was not done in transit, he gave decree for the sum sued for with expenses.



It is with pleasure that I take notice of the progress of flash-light photography in this district. The Leith Town Council, feeling their council chamber to be too small for the increasing business of the borough, have resolved upon a scheme for the enlargement of it. Their last meeting in the old chamber was held recently, and when the business was concluded, the room was cleared of all save the Magistrates and Council, who kept their seats while Mr. John M'Kean, the well-known successful photographer of Ferry Road, Leith, took a flash-light shot at them. An excellent print has been obtained of the Board, and Mr. M'Kean has, with his usual generosity, at the request of the local press, handed it over to them for reproduction. Mr. M'Kean has every reason to be satisfied with his work on this occasion, and it is to be hoped that other public bodies will avail themselves of the opportunity now afforded them of perpetuating, by means of the flash-light, interesting scenes in their history as they occur from time to time. I look upon it that the time is not far distant when every important dinner party or ball will be so photographed.

## Notes from the Liverpool Centre.

(By our District Editor.)

EARLY last Monday Mr. Paul Lange left Liverpool to open the *conversazione* which inaugurated the first show of the Gloucester Exhibition. Mr. Lange also gave "Iceland" on Monday night, a lecture which has considerably added to this gentleman's already enviable reputation. The house was delighted with the pictures and the accompanying lively descriptive matter.

Our late Exhibition and Exhibition matters being pretty well out of the way, the local societies, particularly the premier associations of Liverpool and Birkenhead, are settling down to close and serious work again. Excellent accounts come from nearly all our camera men's clubs. Last summer most of the executives organised a series of day and half-day picnics, and this year similar enjoyable jaunts on a more extensive scale are to be promoted. Evidently these combinations of business and pleasure are very popular. Those organised by the Liverpool Amateur Photographic Association, at least, are very largely attended even when frequently held.

The latest photographic society in Liverpool, the Liverpool Camera Club, is, I hear, progressing rapidly. There is marked energy and meaning in the proceedings of the Society, and a breeziness which betokens plenty of healthy life.

Thursday night next is fixed for the ordinary monthly meeting of the Liverpool Association, when a large attendance and a substantial increase in the membership roll is anticipated—the latter as a result of the exhibition. At the meeting, a complete report of the big show will be read, one which I understand will prove very gratifying to all concerned. I looked up several gentlemen of the executive a day or two ago, and found each in high spirits over their superb successes. The remarks of the photographic journalists from London who spoke at the opening proceedings of the show were to the effect that in every respect the arrangements for the function were in an unusually forward state. This same energetic action on the part of the enthusiasts was noticeable in the dismantling of the Exhibition. On the last night the show closed at 10.30; the next day was Sunday, and, of course, nothing was done in the way of taking down. By the following Wednesday night, however, all the pictures, exhibits, etc., had been packed up and removed, the decorations consigned to limbo, the galleries swept out, and desolation reigned supreme. Those who visited the Exhibition will admit that this was a "tall" three days' work.

Before this issue of the AMATEUR PHOTOGRAPHER is in the hands of readers the medals won in the show will have been received by the winners. They were distributed at the ladies' social conversation and dance given as a wind-up on Tuesday last week, and were immediately despatched to the rightful owners. *Apropos* of the medals, I have received a letter from a correspondent, who says, "I won a silver medal in the late exhibition at Liverpool, and it was handed to me with something to this effect: 'We are sorry you did not get a gold one.' I take this as a very kindly compliment, but am more than pleased with my silver award. Having spent three days in the exhibition, and having gone carefully through the exhibits, I would say, in answer to the compliment paid me, that the lady and the three gentlemen who secured the four gold medals unquestionably

deserved them." This expression of opinion should be very gratifying to the gentlemen who adjudicated and to the exhibition authorities as well. There can be no question that, with one or two exceptions, and these not very serious ones, the placing of the over thirty medals was exceedingly satisfactory. If any competitors really had grounds for dissatisfaction, such might be found in Liverpool itself.

By the way, it must be stated that the final festivities in connection with the closing of the Exhibition were a pronounced success. The "flash-light" could have been introduced with effect.

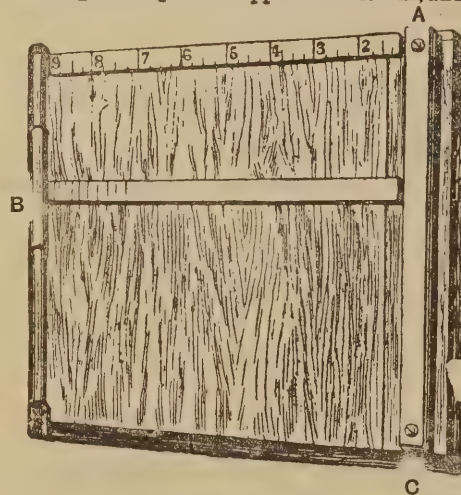
As a result of the enormous interest manifested in the Exhibition by the general public, I hear that there is a strong probability of a prominent Liverpool amateur contributing a series of photographic articles to a local newspaper.

In regard to the sensational breach of promise case just closed, it is the talk here that a detective camera, judiciously handled, might have been made to play an important part in the trial. Ladies of "Sassietty" would do well in future to snap-shot any and every one of their admirers in the act of proposing. A photograph artfully placed in position on a convenient sideboard would also be of material value. Gentlemen would then be photographed and phonographed into keeping their pledges.

## Apparatus.

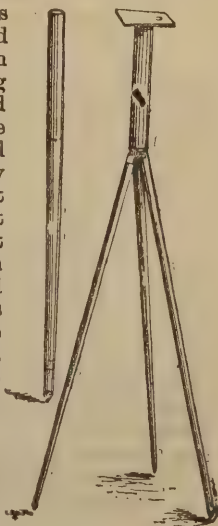
### THE PARALLEL TRIMMER.

MR. W. R. BAKER, of Wallington, has left a specimen of this very ingenious piece of apparatus with us, and we shall be pleased



to show it to any amateur calling at the office. The trimmer is made in several sizes, the smallest being whole-plate, which will, however, trim all sizes below it. It will also answer admirably for cutting mounts and masks for transparencies, and can even be used for cutting plates. We give the directions for use issued with the trimmer:—Slip the print under the cutting guide A, and T square B, until only so much projects as is intended to be cut off. Now push the T square along until it is near some vertical line, moving the print, if necessary, so as to make this line parallel with it, and whilst pressing the guide firmly down with the left hand, pass the knife or cutting wheel along its outer edge. The trimmed side is then placed accurately against the raised edge of the rule and the knife used as before. Although the T square is only used in cutting the first side it is best left on the board, and the print moved about beneath it, as its weight keeps the print from slipping when placed in position against the rule. If there are no vertical lines, lay the arm of the T square across the centre of the picture, and it will be easily seen at what angle to cut the bottom. Should a water horizon be shown, the top and bottom must be trimmed parallel with it.

The price of the whole-plate trimmer is 8s., and of the 12 by 10, 10s. 6d. Mr. Baker also showed us a walking-stick stand, which is fairly light, easily set up, rigid

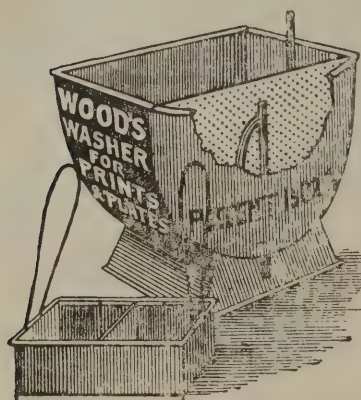




enough for a hand-camera or quarter-plate, and consists of only two pieces, exclusive of the head.

### WOOD'S IMPROVED WASHER.

This washer, which was on view at the recent Liverpool Exhibition, is one of the best of those with which we are acquainted. The slight alterations made in the recent ones render them



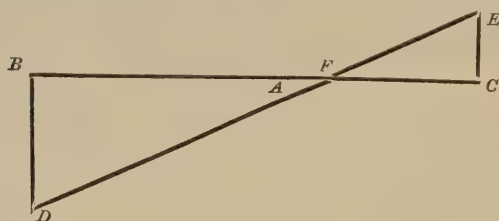
more effective than the old form. Mr. Wood is an analytical chemist, and he gives his word that the washer will eliminate every trace of hypo from plates in fifteen minutes and from prints in thirty minutes. Besides this, the prints are always on the move, and there is an automatic arrangement by which, if the supply of water be suddenly cut off, neither plates nor prints can be left dry. The rack supplied for using with plates is adjustable for all sizes of plates, and the long

handles attached to it will be found useful for hanging the plates up to dry. Mr. Wood says he has sold enough washers to make a pile nearly four times the height of St. Paul's. The price of an 8½ by 6½ washer is 12s. 6d.; and of an 8½ by 6½ rack, adjustable for nine sizes, 4s. 6d.

## Quarterly Examinations in Photography.

**Question 4.**—What is the optical centre of a lens, and how would you determine the position of the same?

**ANSWER.**—The optical centre of a lens is that point in the axis of a lens through which the lines which join any points in an object and their image meet. Strictly speaking, a double lens has not got an optical centre, but the point can be found which may be called an optical centre, as follows: Place in front of the camera a post at, say, 50 ft., at B, and another at right angles, at, say, 10 ft., at D. Focus the first accurately on the middle of the ground-glass.



Measure accurately AC and EC, the distance from the ground-glass to the starting-point, and the length of the space on the ground-glass between the images of the two rods. We now have the materials for finding out what we want.

AB = 50 ft.  
BD = 10 ft.  
AC = 5 in.  
EC = 1 in.  
BC = 50 ft. 5 in.

Now,  $BD + CE \therefore CB :: CE \therefore CF$   
 $10 \text{ ft.} + 1 \text{ in.} \therefore 50 \text{ ft. 5 in.} :: 1 \text{ in.} \therefore CF$

The optical centre being in F.

$1 \times 605 \div 121 = 5 \text{ in.}$ ; the optical centre is 5 in. from C, the centre of the ground-glass, along the axis of the lens, which can easily be marked on the brass mount. Generally, the stop is inserted in the optical centre.

R. C. M.

**Question 5.**—Write a brief note on pinhole photography; and how would you determine the diameter of the hole for a given plate and distance?

**ANSWER.**—For pinhole photography I have used my ordinary camera, substituting for the front which carries the lens a bit of cardboard, blackened at the back, pricked with a needle. I believe it is better to use a heated needle. I fancy, from the few experiments I have made, the width of angle included is the same at any given distance of the plate from the aperture as would be included by a lens of the same focal length. I found at 7 in. and at 4 in. that the size of the image was the same as was given by lenses of these focal lengths respectively.

I have no means of measuring the aperture, and to obtain good results the size of the aperture is very important, and varies with each distance. When  $d$  is the diameter of the aperture, and  $F$  the distance,  $\frac{d^2}{F} = 0.00081$ . An article on this subject will be found in the *British Journal* for June 1st, 1888.

I have not succeeded in getting at all sharp negatives, and I believe it is impossible to get them equal to negatives taken with a good lens, but I attribute part of my failure to my not having hit on the right relation of aperture to distance.

I gave at 4 in. an exposure of 30 sec. on an England's ordinary plate. At  $f/45$  I give with a lens about 2 sec., which leads me to think my aperture was too big. The formula given above will always give the right size.

R. C. M.

**Question 6.**—Forward a print from a cloud negative, and state (a) the position of the sun with regard to the camera, (b) time of day, (c) method of obtaining negative.

**ANSWER.**—The sun was about 45 deg. to the right of the direction in which the camera was looking; time of day, 11 a.m. in March.

Plate, England's ordinary celluloid film. A yellow screen was used. Stop,  $f/16$ .

A slow instantaneous exposure with Guerry double-flap shutter, I fancy, from a quarter to half a second.

Developer:—

Pyro	...	...	...	...	...	...	3 gr.
Bromide	...	...	...	...	...	...	1 "
Ammonia	...	...	...	...	...	...	2 "

The bromide and ammonia were added by degrees, beginning with a quarter of the quantity.

You ask for no information about print, but I may mention it is on Eastman's bromide paper, developed with ferrous oxalate.

R. C. M.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Brighton.**—At the ordinary fortnightly meeting of this Society, held on the 14th inst., Mr. J. Howson delivered a lecture on the advantages to be derived from the use of the "Alpha" paper in photographic work. Practical demonstrations were carried out before the audience of the manner in which to proceed in order to get different shades of colour, etc. The lecture was followed by an exhibition in the developing of "special" lantern slides, the object of which was to show that in the particular process followed, no distinctive difference was shown at the finish between the plate subjected to ten seconds' exposure and that subjected to an exposure of a much longer period.

**Cornish.**—A meeting was held on the 14th inst. Enlargements were on view which had been lent by the Editor of the AMATEUR PHOTOGRAPHER. After inspecting the pictures, Mr. H. Tonkin, Hon. Sec., gave a demonstration of "Enlarging," two negatives being exposed by artificial light on bromide paper and developed by the oxalate developer, the resulting pictures being admired by all present.

**Croydon Micro.**—An ordinary meeting was held on the 17th inst. Mr. Edward Lovett (in the chair), when an exhibition of hand-cameras took place, amongst the exhibitors being Messrs. Adams and Co., Ideal and Adams'; Mr. Cusworth, Repeater; Messrs. Griffin and Sons, Dines; Houghton and Sons, New Patent Hand-Camera; Messrs. Humphries, Quadrant; Mr. Hurst, Hurst's; Messrs. Marion and Co., Radial; Messrs. Parker and Son, Companion; Platinotype Company, Key; Messrs. Robinson and Son, Luzo; Messrs. Ross and Co., Portable Divided and New Patent; Messrs. Mawson and Swan, Reflex. The next ordinary meeting will be on May 1st, when Mr. D. E. Goddard will read a paper entitled "Elementary Silver Printing." Saturday, April 25th, half-day excursion to Oxted, for Godstone; leader, Mr. W. Low Sarjeant.

**Devon and Cornwall.**—"The Essentials of a Photographic Camera" was the subject of a lecture delivered on the 13th inst. at the Athenæum, Plymouth, by Mr. W. G. Tweedy to the members of



their society. Mr. Tweedy considered that in choosing a camera a purchaser, to ensure success, should be careful that it was strong, light, of small bulk, easily put together and taken down. He instanced cases in which great inconvenience had been occasioned through complicated arrangements. Furthermore, the camera should be so constructed as to be damp-proof to the slight showers that often overtake a photographer in the course of his rambles. He deprecated a camera having a number of loose parts, as they were apt to get lost or mislaid. Mr. Tweedy exhibited various kinds of cameras, many of which he had himself improved, and stated that he was going to bring before the public a new and improved hand-camera in the course of a few days.

**Ealing.**—This Society held their last meeting for the winter season on Thursday, the 16th, at 8 o'clock, in the Public Buildings. The room was well filled with members and their friends; and the many ladies present evinced the interest taken by them in photography. Two gentlemen were proposed for membership, and Mr. W. B. Wright and Dr. Clifford Gibbons were appointed auditors for the year. Ten names were given in of intending competitors for the prizes offered by the President for lantern slides, to be made from negatives to be supplied to the competitors. The evening was devoted to the exhibition of lantern slides. Slides were contributed by Messrs. Mawson and Swan, Mr. Whiting, Mr. F. H. Williams (Hon. Sec.), Miss Williams, Mrs. McDonald, T. Crisp, jun., V. H. Sanders, and Dr. Clifford Gibbons.

**Holborn.**—Mr. T. O. Dear presided at the usual weekly meeting of this Club on the 17th inst., when Mr. Fred. Brocas gave an instructive lecture on "General Hints to Beginners," dealing with the numerous stumbling-blocks which seem to enter into a compact to frighten a beginner into throwing photography over. He specially mentioned the matter of the foreground. Not only beginners, but those who were fairly proficient in photography, have negatives in which about one-third of the plate consists of an uninteresting foreground. Under-exposure was also dealt with at great length. Most beginners, he said, always under-expose. It was much better to over-expose, because by judicious development a fair negative may be obtained from an over-exposed plate, but an under-exposed one would never give a good negative. In the discussion which followed, halation formed the chief topic, it being the general opinion of the members that, although a troublesome job, backing the plate was certainly an advantage.

**Harlesden.**—An entertainment was given at the Court-house on the 13th inst. by the members of the Harlesden and Willesden Photographic Society. Every inch of space was occupied when the ball was set rolling by Mr. Winterbon's well-executed pianoforte solo—"Sketches from a Portfolio." Then the room was darkened, and Mr. J. Naylor commenced his "Lantern Exhibition," entitled "A Holiday Trip with a Camera." By the aid of a limelight lantern, photographs taken with the camera were cast upon the curtain, while Mr. Naylor accompanied them with a few words of explanation, from Chester proceeding to North Wales, on into Yorkshire, and thence into the South of England. Applause greeted every picture, and indeed it was deserved, for as specimens of photography they were marvellous. So vivid were some of the illustrations that one seemed to be actually standing within a few feet of the spot, again you could discern every leaf on a tree, and cattle appeared to be within touch. The exhibition was concluded with a few miscellaneous slides. As a pleasant little break, a few songs followed. A second lantern exhibition was then given by Mr. T. Clapton, who dealt exclusively with "Walks near Home." Starting with a map of Willesden and neighbourhood, Mr. Clapton produced pictures well-known to most of the audience. Kingsbury, the Brent, Twyford Bridge, Twyford Abbey, Forty Lane, Willesden Church, The Old Crown, were all subjects of which a great deal had been made. This was another display of first-class work, and it was greatly appreciated. Not the least part of Mr. Clapton's exhibition, however, were his many quaint and humorous remarks. A life-like representation of Mr. Cohen, the Secretary, was the last slide thrown on the curtain, and we may add that this gentleman announced during the evening that the society were thinking of starting classes, and he appealed for additional members, asking people not to wait till they got their outfit, but to come and join at once so as to avail themselves of the society's advice.

**Ilkeston.**—On the 16th inst. the members of this Society gave their second lantern exhibition in the Town Hall, Ilkeston, before a large audience. Dr. Carroll (President of the Society) took the chair, Mr. G. W. Woolliscroft (Treasurer) exhibited the slides through his lantern, and Mr. W. Shakespeare (Hon. Secretary) officiated as "guide, philosopher, and friend," in the shape of supplying the necessary description.

**Jersey.**—The annual meeting of this Society was held on the 1st inst., when the accounts were audited and passed and the annual report read. The following officers were elected for the ensuing year:—President, Capt. Lamb; Vice-President, Col. Jackson; Secretary, Dr. Taylor; Treasurer, Mr. Gruchy. Committee: Mrs. Haddon Smith, Mr. Messervy, Mr. Andrews, and Mr. Toms. Mr. Hammond

Spencer, C.E., was proposed and elected as a member. It was proposed and carried that the best prize of the year, a gold medal, be given for the best excursion record, also that a photographic survey of Jersey be commenced. The certificate for best picture for March excursion was awarded to Capt. Lamb for a ploughing scene. On the 7th inst. there was a well-attended excursion to Mont Orgueil Castle, Gorey. On the 15th the excursion pictures were voted for, the honours falling to Col. Jackson, who secured thirteen out of twenty-four votes; seven for an excellent platinotype of Gorey Castle and village, with group of bluejackets drawing water-cart in foreground, and six votes for a similar picture with bluejackets in the middle distance. Mr. Toms then gave a brief outline of the chief platinotype processes, and showed practically the mode of coating the paper and developing the print. Dr. Taylor having expressed his inability to continue his duties as Secretary, a cordial vote of thanks was accorded to him for his labours in the past. All communications in future should be addressed to F. Woodland Toms, F.I.C., F.C.S., 21, Grove Place, Jersey. The next meeting will be on May 6th, when Capt. Lamb will give paper and lantern show on "Through Europe with a Hand-camera."

**Lewisham.**—The largest ordinary meeting of the club was held on the 17th inst., when eighty members were present. Mr. A. R. Dresser gave a lantern-slide demonstration, it being specially interesting in consequence of his criticisms of the slides sent in to a recent competition, most of which he said would have been greatly improved by the addition of clouds. He first showed how to print in suitable clouds, and to vignette any parts that were too dense. He then exposed the plates 10, 30 and 80 seconds, respectively, to show what great latitude there was, if suitably developed. He used hydroquinone, and advised the use of the carbonates in connection with it, as he said the caustics gave very granular results if development was at all prolonged. After the demonstration, he put through the lantern some of his prize slides, and drew the members' attention to the fact that wherever necessary clouds had been added; in fact, in the majority the clouds formed the principal feature. He also showed a few slides of his celebrated dog, which were greatly admired, and a very hearty vote of thanks was given him for one of the most successful evenings the club has had. The next meeting on May 8th, "Cycling and Photography."

**Manchester.**—At the monthly meeting of the amateur photographic society held on the 14th inst., the Rev. H. J. Palmer in the chair, Mr. W. Lamond Howie, F.C.S., Eccles, described and illustrated by 120 photographs shown by the lime-light lantern a visit paid to Ober-Ammergau last summer. The lecturer first dealt with mediæval German art as seen in the architecture of Cologne, Strasburg, Nuremberg, Munich, etc., and in bronze, woodwork, and paintings, which he had photographed in the museums and churches. In passing from this portion of his subject he made some strictures on the comparatively meagre patronage bestowed on art by the English nobility, who—to quote M. Gally—seem to prefer to spend their money on horses and dogs. Many beautiful slides were exhibited of the Bavarian Tyrol, and afterwards a well-selected series of scenes from the Passion Play. The lecture concluded with views of the earth pyramids which exist in ravines on the Ritten, in the Austrian Tyrol, several being exhibited like church spires with stones many tons in weight perched on the apex, which showed in a striking manner the effects of denudation. The lecturer was frequently applauded.

**Richmond.**—On the 17th inst. a well attended meeting was held, Mr. Jeffrey in the chair, the subject for discussion being "Intensifying, Reducing, and Retouching." Two pieces of home-made apparatus were shown; a frame or box for contact printing, either of paper or transparencies, by Mr. Faulkner, and a shutter by Mr. Richardson, both being of ingenious design and excellent workmanship. The discussion which followed was well sustained and productive of many practical hints.

**Stockton.**—On the 9th inst. the first excursion of the season took place to Saltburn-by-the-Sea, but owing to unfavourable weather very few members turned up. The visitors were afterwards entertained to tea by the President of the Society, Dr. Stainthorpe. The usual monthly meeting was held on the 14th, Dr. Stainthorpe presiding, who also obtained the highest number of marks in the monthly competition, the subject being "A General Landscape." Samples of the Barnet plate, kindly sent by Messrs. Elliott and Son, were distributed amongst the members. On the 27th inst. there is to be a public lantern show.

**Toynbee.**—The annual general meeting was held on the 14th inst. After the report had been read and the usual business transacted, Mr. J. Seed, of the Harlesden Photographic Society, gave his very interesting and instructive lecture on the "Elementary Rules of Art Applied to Photography," and with the help of a number of lantern slides, copies of standard engravings, showed what photographers should endeavour to secure in their pictures. The lecture concluded with a large number of beautiful lantern-slides, photographs by the President of his Society, Mr. J. Naylor, clearly showing that artistic photography is possible. Thursday, 16th, lantern evening

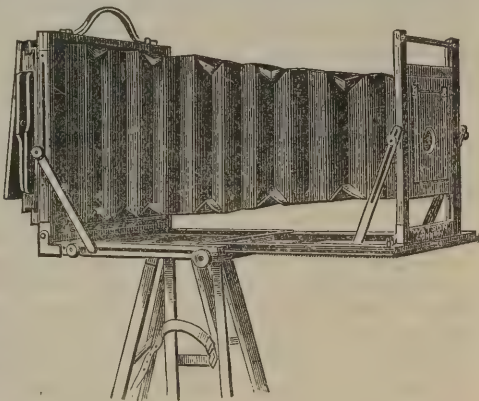


## Crystal Palace Exhibition.

THE show of apparatus at the Palace this year is small, but we must say that what is shown is of good quality and workmanship, and well worthy of the attention which it excited. It is to be regretted, however, that so few of the larger apparatus makers were represented—from the point of view of the public, and not of those who had stands.

### Block A.

W. WATSON AND SONS, 313, High Holborn, occupy the whole of this block with a very imposing show, the great feature of which is their celebrated "Acme" camera, of which we give two illustrations. It is well made, with interchangeable parts and all the necessary movements, and if desired fitted in aluminium. They also show a couple of fine studio cameras on stands; the "Vanek" hand-camera, the great peculiarity of which is that it enables the user to focus on the finder. There are also a number of condensers,



of which are very striking and attractive. The process, which is a novel one, is being patented, and we hope very shortly to give an article describing it fully.

### Block C.

DAVID NOAKES AND SON, Nelson Street, Greenwich, show some fine enlarging apparatus, and some excellently finished biunial and triunial lanterns; condensers from  $3\frac{1}{2}$  to 12 in. in diameter; the Key hand-camera, a good selection of lenses, the "Invicta" series of cameras. They also had on view the new patent regulator tap for gas cylinders, a great aid to safety in working. Several lathes are working at the stands, and lantern and photographic apparatus is seen in course of manufacture.

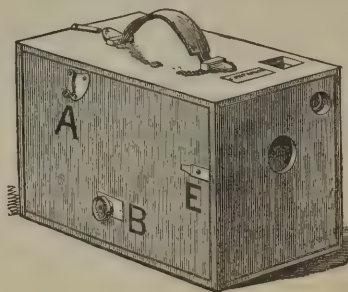
### Block D.

Messrs. TAYLOR, TAYLOR, AND HOBSON, Slate Street Works, Leicester, have on show samples of all their lenses, including the celebrated Caskets. They also show an  $8\frac{1}{2}$  by  $6\frac{1}{2}$  Blair Compact camera, Blair tripods in mahogany and ash, finders of various kinds, and the "Hawk's-eye" hand-camera. For a further description of



Messrs. Taylor's lenses we refer our readers to the article in the AMATEUR PHOTOGRAPHER of March 27th last. We give illustrations of the Detective camera lens, and Concave finder.

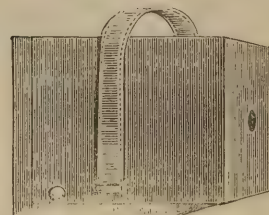
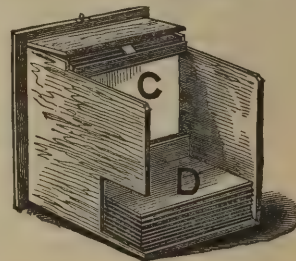
PARKER AND Co., 288, High Holborn, W.C., devote their space



principally to the exhibition of the "Companion" Hand Camera, which we fully noticed in a recent issue. Since our notice, however (April 10th), a new shutter had been attached to the camera, consisting of two metal shields, each perforated with an aperture the same size as the lens, which pass across each other, and are worked by a lever, giving great latitude

in the time of exposure. A Taylor finder has also been added. There is also the "Companion" Tourist's Camera, which has a long extension, and is fitted with a rising front, which is fixed at any point automatically without the use of screws.

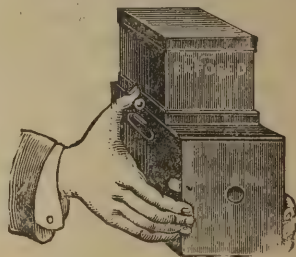
S. T. MATTHEWS AND Co., 8A, John Bright Street, Birmingham, devote most of their space to the exhibition of the "Itakit," "Sovereign," and "Kinematic" Hand Cameras. The "Itakit," which costs 12s. 6d., is a most ingenious



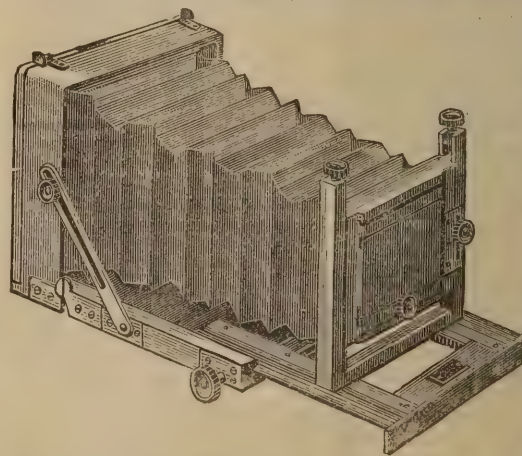
little instrument. It is made of metal, carries twenty-four plates  $3\frac{1}{4}$  by  $3\frac{1}{4}$ , and is fitted with a rapid achromatic fixed-focus lens. The "Sovereign" is a little better instrument, and is fitted with a finder and focussing screen the full size of the plate. Extra magazines to hold other twenty-four plates are supplied at 3s. 6d. each. The magazine shown on top of the "Itakit" can be placed inside the lower part for convenience of

carriage, and the whole, if desired, enclosed in a leather case. The specimen prints on the stall were all that could be desired.

JUSTIN BROS., 116, Beckenham Road, Penge, S.E., show the "Pocket Walking-stick" and Camera Stand. Each leg of the stand is made of a strong steel ribbon, wound spirally, and each will shut up into a case not much bigger than a thimble.



W. F. SLATER, 169, Southampton Street, Camberwell, S.E., shows some well made long-focus cameras, with all necessary



movements, light, and of reasonable price, a half-plate costing £1 3s., and a 15 by 10 £10 5s. He shows also an attractive little quarter-plate set which he sells at £1 11s. 6d., fitted with lens, tripod, etc. There are light

xylonite trays of various sizes and colours, and a fine lamp which he has just put upon the market. It throws practically no shadow, has one side orange glass and the other red, and can be



turned in any direction by a touch of the finger, without affecting its stability. Mr. Slater also has on view a number of his very artistic frames, to the character of which we have referred on previous occasions.

J. DESIRE ENGLAND, 21, Charles Street, Royal Crescent, W., shows specimens of negatives on his well-known films, and also film carriers, lantern and photo-mechanical plates, and bromide opals.

T. W. COUCH AND Co., Steam Works, Dalston Lane, N.E., have a whole stand devoted to frames of all sorts, sizes, descriptions, and colours, offering a remarkably wide choice to the photographer who desires to frame his work appropriately. There were also some very fine engravings and etchings for sale, some of which would give an amateur hints on composition.

A PALMER, 36, Briar St., Nottingham, had on view a model of a new plate and print washer, to be made in either earthenware or zinc. It has several novel features, the principal being the sliding adjustment arrangement, by means of which three sizes of plates can be washed at once.

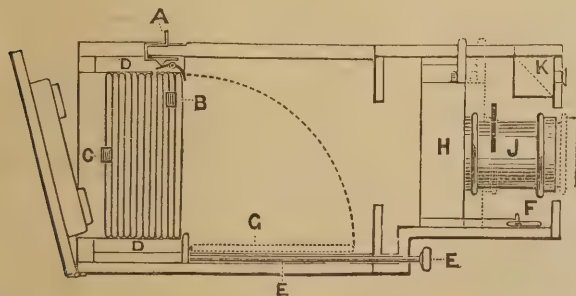
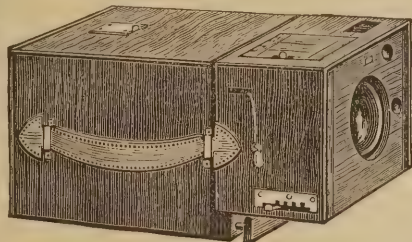
HANNAM AND McILVEEN, Atlas Works, Gainsborough, show photographic mounts in great variety, making a feature of those with the gilt bevel edge cut into various patterns.

ARUNDEL AND MARSHALL, Penn St. Works, Hoxton, N., show boxes for storing plates and negatives. They are made of cardboard and covered with dark-green cloth, making a presentable appearance, and occupying very small space.

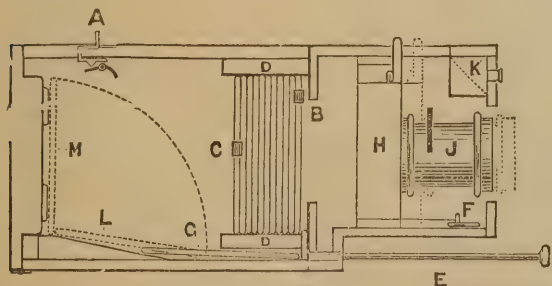
#### Block E.

GEORGE HOUGHTON AND SON, 89, High Holborn, have a large show, one great feature, of course, being their portable dark-room, fitted with their patent sink. On the door was fixed a model of a less pretentious dark-room, covered with Willesden paper and tent canvas, but very comfortable. The "Automatic" hand-camera was on view (see illustration). The changing arrangement is most ingenious.

The lens is of 6 in. focus, and the camera can be focussed so that everything beyond five feet will be in focus. It carries twelve



plates. Another novelty was a spring for attaching to the end of the focussing cloth for the purpose of holding it securely to the camera. There is also to be seen the ladder camera stand, by



means of which a person can get himself and his camera raised above the heads of a crowd. The stand folds up into small space

and is easily carried. A striking feature was some pictures 5 ft. long taken by the "Cylindrograph," which was also to be seen. A section of the stand was set aside for the exhibition of some very tasteful frames.

### LIST OF AWARDS IN THE ART DIVISION.

#### PROFESSIONAL.

*Gold Medal for Best Alcove.*

Van der Weyde, Regent Street, W.

*Silver Medal for Best Screen.*

W. W. Winter, Derby.

#### Bronze Medals.

- Class AP, Sec. 1.—R. Keene, Derby.  
 " " 2.—R. H. Lord, Cambridge.  
 " " 3.—F. W. Edwards, Peckham.  
 " " 3.—C. Whiting, Ealing Dean, W.  
 " " 3.—Lala Deen Dayal, Indore, Central India.  
 " " 8.—A. Swan Watson, Edinburgh.  
 " " 9.—John Collier, Birmingham.

Class CP, Sec. 1.—W. M. Malby, Chichester.

" " 7.—W. L. Colls, Barnes.

Dry Point Series.—H. Flather, Peckham.

Reproductions.—S. B. Bolas and Co. Ludgate Hill.

The judges recommend an especial award of Gold Medal for Portraiture in the case of the remarkable exhibits of Mr. W. Crooke, Princess Street, Edinburgh.

*Challenge Cup* . . . . . Birmingham.

#### AMATEUR.

Silver Medal for Ladies . . . Miss Lil Tomkinson, Liverpool.

#### Bronze Medals.

- Class AA, Sec. 1.—J. A. Hodge, Chancery Lane, W.C.  
 " " 1.—B. Karleese, Birmingham.  
 " " 2.—The Rev. Precentor Mann, Bristol.  
 " " 2.—J. E. Austin, Maidstone.  
 " " 3.—C. Court Cole, Oxford.  
 " " 5.—A. R. Dresser, Bexley Heath.  
 " " 7.—Karl Greger, Islington.

Class B, Sec. 2.—J. H. Pickard, Birmingham.

Entire Exhibit.—H. Selby, London.

#### SCIENTIFIC PHOTOGRAPHS.

#### Bronze Medal.

Class AC, Sec. 3.—A. T. Stanley Kent, Oxford.

#### TRANSPARENCIES.

#### PROFESSIONAL.

#### Bronze Medal.

Class AE, Sec. 1.—F. W. Edwards, Peckham.

#### LANTERN SLIDES.

#### PROFESSIONAL.

*Bronze Medal* . . . . . G. West and Son, Southsea.

#### AMATEUR.

#### Bronze Medals.

- J. E. Austin, Maidstone.  
 W. C. Beetham, Cheltenham.  
 J. Tavener, London.  
 J. W. Wade, Manchester.  
 A. R. Dresser, Bexley Heath.  
 Dr. T. Morton, Sheffield.

**Mixed Hydrochinon and Eikonogen Developer.**—The following developer was first recommended by the Photographic Club of Paris:—

Sulphite of soda	...	...	...	100 grammes.
Eikonogen	...	...	...	15 "
Hydrochinon	...	...	...	5 "

are dissolved in 1 litre of hot water. When cooled, 50 grammes of carbonate of potash are added. This developer is used by many Viennese amateurs, and they confirm what has been said of it, namely, that the mixed bath unites in itself the good qualities of both the hydrochinon and eikonogen developers; it works as energetically as the latter, without, however, veiling the shadows, and gives the characteristic strength obtained with hydrochinon. The temperature of the developer is important—the higher it is, the more energetic the action, and thus a shorter exposure is required.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4631. **Borax Bath.**—I mix as follows: 1 oz. of powdered borax, 2 gr. chloride of gold, 10 oz. of water. The water is from off the leas of our parish church, and is filtered and boiled. I cannot get anything but a deep brown colour, and I want a deep purple. I put fifteen teaspoonfuls of the above water to a 15-gr. tube of gold chloride. The sensitized paper I use I get from Whiteley's. Do I mix the gold right?—I. C. R.

4632. **Norway and Sweden.**—Can any reader give me any information relative to customs regulations in these countries, and whether any special precautions need be taken with undeveloped plates? Is it necessary to put a special label on packets of plates, and if so, can any one tell me the correct wording for conveying the warning that the boxes must be opened in a red light only?—THRONDJEM.

4633. **Lens and Developer.**—Enquirer would thank any one very much for answering the following: (1) Is an Optimus Huryoscope better than a portrait lens for bust or three-quarter-length portraits? (2) What is the best developer for portrait negatives, using Ilford ordinary plates? (3) What distance should there be between sitter and background, scenic or plain?—ENTERPRISE.

4634. **Lens.**—Shall I find a No. 4 Ross' portable symmetrical (5 by 1½) large enough for a half-plate?—BLANCHE.

4635. **Hire of Hand-Camera.**—Can any of your numerous readers inform me where I can hire a hand-camera for two or three weeks' holiday work?—M. A. J.

4636. **Matt-Surface.**—How can I render ordinary prints dull for the purpose of copying them? I tried soaking in water and squeezing them on ground-glass, but they fell off quickly without losing the gloss.—PHOS.

4637. **Copyright.**—Is there any copyright in photographs of celebrated pictures by Landseer, Clemenson, Laocouche, etc.? I wish to copy some for a fete in Dublin.—PHOS.

4638. **Richmond (Yorks) and Barnard Castle.**—I intend spending two or three days in the City of Durham shortly, and I expect to have a day to spare, should be glad of advice as to which of the above places is best worth a visit, and also what points of interest there are in the one visited.—CUTHBERT.

4639. **S.W. of England.**—I purpose spending a holiday in the S.W. of England. Will any brother amateur who has visited both districts tell me whether Torquay and neighbourhood, or Penzance and Land's End offers the finest subjects for the camera? Quality more than quantity wanted.—ALPHA.

4640. **Landscapes.**—In taking landscapes with a R.R. lens, what advantage, if any, is gained by removing the front combination and using as a single lens? I presume the rectilinear properties are destroyed.—ALPHA.

4641. **Lens for Landscape Work.**—Which is the best kind of lens for landscape work pure and simple? I possess the R.R. and W.A.R. If any other class of lens more suitable, state advantages.—ALPHA.

4642. **Carbon Process.**—Whose is the best and simplest work on this subject for an amateur to study?—ALPHA.

4643. **Hand-Camera.**—Would any of your readers kindly tell me if I can hire a magazine detective

camera for a few weeks, and where to apply? Reference given.—DETECTIVE.

4644. **Hand-Camera.**—Will any reader kindly give advice as to purchasing a magazine hand-camera? Price not to exceed £4. To carry not less than twelve plates. Is the Rover a serviceable one? Can the Sphinx, made by Underwood, be recommended? Does a camera, to take 5 by 4 plates, compensate for extra weight and size?—PERPLEXED.

## QUERIES UNANSWERED.

April 3.—No. 45-6.

10.—Nos. 4602, 4604, 4608, 4609, 4611, 4615.

17.—Nos. 4618, 4619, 4630, 4621, 4622, 4623, 4624, 4625, 4629, 4630.

## ANSWERS.

4317. **Antwerp and the Hague.**—(1) Ten to twelve francs a day. Certainly ten days can be profitably spent. Suggestion: First day, Harwich to Antwerp (Hotel des Flandres); second and third days at Antwerp, afternoon of third day to Dordrecht (Hotel Bellevue); leave Dordrecht on afternoon of fourth day for the Hague (Hotel Central, room three francs); fifth, sixth, and seventh day at The Hague, with excursion to Scheveningen; morning of eighth day to Rotterdam by steam tram and boat via Delft (worth seeing); ninth day at Rotterdam; tenth day cross back to Harwich. (2) Good woodwork in Antwerp churches—pulpits, choir stalls, etc. No difficulties about photography; tip custodian. (3) Absolutely no advantage in taking Cook's tickets or hotel coupons; travel independently, use your common sense and gain experience. Go to office of G. H. R. in Regen's Street for tickets, and buy also Percy Lindley's "Tourists' Guide to Continent and Walks in Holland," 4½d. each at a discount bookseller's.—C. S. COBB.

4626. **Ilford Pyro Developer.**—This, like most pyro developers, cannot be used for a second plate, unless both plates are developed together in a large dish.—PHOS.

4628. **Ilford Pyro Developer.**—It is much better to mix up fresh for each plate to avoid risk of staining.—R. A. R. BENNETT.

4627. **Partial Intensification.**—

No. 1.			
Blochloride mercury	...	...	60 gr.
Water	...	...	6 oz.

No. 2.			
Iodide potassium	...	...	90 gr.
Water	...	...	2 oz.

No. 3.			
Hypo sulphite sodium	...	...	120 gr.
Water	...	...	2 oz.

Mix Nos. 1 and 2 and add No. 3. When the negative has been softened by soaking in water, dip a sponge or some cotton wool in the above solution, and rub it gently on the part to be intensified. Take care that the intensification is gradually shaded off, or a hard line will be made in the negative.—CAILLON.

4628. **Negative, Film Inside.**—Make a dry plate transparency of the reversed negative, and copy it in the camera; the film of the transparency being turned away from the dry plate. Another way is to print the reverse negative on carbon tissue, and mount upon glass, and copy by contact, or in the camera with the film towards the dry plate.—CAILLON.

4628. **Negative, Film Inside.**—If the negative is a good one you could print it by the Autotype process, and get the right picture, as prints by this process are reversed. You can get materials from the Autotype Company, Brownlow Road, Baling Dene, W. Or you could make a transparency from the negative on a film, and then make another negative from the transparency, placing the gelatine film of the plate to the celluloid side, which would give you a correct negative.—R. A. R. BENNETT.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S POST if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

R. E. D.—Mix the washing and developing solutions, and add one quarter of the volume of saturated solution of sulphate of iron, and heat in a porcelain dish till it boils, when the platinum will be precipitated and can be collected on a filter, well washed with hydrochloric acid to wash out the iron, then dissolve in aqua regia.

E. BONY.—(1) About four lamps. (2) It is far preferable to use the flash-light than ordinary ribbon, but we should think about twelve inches in each would do.

W. H. MERV.—The printing-out effect is by no means novel; it is a very well-known fact that an image though weak can be obtained on bromide of silver by printing-out.

F. G. READER.—Certainly have a turntable; its advantages can be better shown than described here. Call and see a whole-plate camera fitted with turntable now at our offices. We will then speak to you about the lens. You will note we call attention to the vacancies in your portfolio club.

F. W. LAUS.—Glad to hear from you. Will write you later on.

J. GOULD.—We note your letter.

C. L. STRYVENSON.—Using the special instantaneous plates you name you cannot do better than use f/16. This opinion we have had corroborated by the maker of the camera.

ALFRED CORNISH (Melbourne).—We will have the matter thoroughly investigated, and write you by an early mail.

FER. OX.—There is no possibility of obtaining a stronger solution of ferrous oxalate than by the aid of neutral oxalate of potash; the only question is whether you are using the formula which gives the strongest solution. The following will give you as strong a solution as it is possible to make:

Neutral oxalate of potash	...	172 gr.
Ferrous oxalate (dry)	...	144 "
Distilled water, to make	...	1 oz.

Dissolve the oxalate in the water and add the dry ferrous oxalate, and allow to stand for twenty-four hours, shaking frequently, then decant from any undissolved oxalate. This is about three times the ordinary strength.

H. F. C.—Your camera will not rack out far enough to enable you to get close to your sitter, so that you would only obtain an image just double the size of that taken with your R. R. when working at its equivalent focus. As using one of the combinations of your lens practically doubles your focus, you would be unable to use an aperture of f/8 merely because the mount is not large enough. You can use an orthochromatic plate without a yellow screen. If you keep your solution in the dark it is immaterial what colour bottle you use. Can you not call on us one Monday afternoon?

ACRAMA.—13 ft. by 8 ft. is hardly large enough for a studio for group work, though you might do very well for single figures of three-quarter-length or busts. We should advise you to obtain a copy of Robinson's book "The Studio, and What to Do in it," which will give you all the information you want. Our publishers will supply for 3s. 6d.

GLADYS.—Your plate is over-exposed and insufficiently developed, and your camera was not quite upright. It would do you no harm to try in a competition, but of course it depends a great deal upon the other work sent in as to your chance.

REV. F. PARTRIDGE.—The pinholes may be due, and probably are, to minute air bells adhering closely to the film. Try passing your finger over the plate when covered by the developer, and let us hear from you again and send us a negative showing the holes.

NOVICE.—You will find pyro far the best developer for a novice. It is a difficult matter to state which is the best washer in the market. Evers has a very good one, and Wood's is also an excellent washer.

H. L. W.—The formula you enquire about is:

Glycerine	...	...	5 oz.
Water	...	...	15 "

Soak the prints in this for ten minutes and dry. The addition of uranium nitrate to a toning bath has a tendency to give blacker tones; it would therefore act in this respect with tungstate.

MUWA.—It is quite true that the quantity of citric acid and bicarbonate of soda will not dissolve in 2½ oz. of water, but the citrate of soda will, and this is what is required. So far as regards the sulphite, the following will probably get you out of your difficulty. Mr. Wall says "Sulphite of sodium is stated to be soluble one part in four; practically 100 parts of distilled water at 58 degs. F. will dissolve 58 parts of the recrystallised salt, but a slight drop in temperature will cause precipitation of some of the salt; we may, therefore, consider that one in three is a fair strength to use." (Anthony's "International Annual," vol. ii., p. 264.) Judging from your expression, "and have failed to keep the sodium sulphite in solution after it cooled down," you are using heat to dissolve your salt; if this is so, you get a weaker solution in the end than by using water at the ordinary temperature, as excess of salt always crystallises out, and crystals once formed there is a tendency to further aggregation of crystals. We have not had the slightest difficulty in preparing the developer as given; the distilled water was gently warmed so as to avoid the great lowering of the temperature, which occurs when dissolving sodium sulphite and most salts, and now, three weeks after mixing, there are no crystals. Provided the temperature of the solution does not fall below about 60 degs. the stated quantity of sulphite will keep dissolved, and if you get crystals you must consider that it is a sign that your solution is too cold, and a cold developer never gives such even results as one used at a regular and correct temperature of 58 degs. F. This, the temperature of developer, is a point well worth consideration for any amateur. We are much obliged to you for pointing out what may be difficulties to others besides yourself, and we shall be pleased to assist



you further if we can, and will shortly have a leader on the subject.

**FLETCHER HILL.**—The fault of want of density may be due to over-exposure, which may be the case with you, and also to not continuing the development long enough, or to insufficient pyro. Try adding more pyro towards the end of the development, and if this is not successful send us up a negative or two to look at, and an exposed but undeveloped plate. The black precipitate in your gold is metallic gold reduced by impurity in the water. It strikes us that you might print deeper and make your fixing bath alkaline by adding ammonia to it. What bath are you using? (1) Over-exposed. (2) Ditto. You might cut off the lower half of this print without any loss; you should have used one of the combinations only of the lens for this. (3) Over-exposed; the camera was all askew. (4) Over-exposed; camera all wrong again. (5) Under-exposed; the figure might have been removed with advantage. (6) Over-exposed; camera again out of perpendicular. Are you printing in the sun? Write us again.

**BEE.**—The studio you suggest is rather narrow, in fact very narrow. We do not know where you could get such a thing as a portable studio such as you want. You might try one of Humphrey's iron buildings, but we must warn you that the London County Council have a voice in the erection of such a thing unless it is on wheels, when it becomes a vehicle and out of their control.

**CESTRIA.**—(1) You ask us what we are utterly unable to answer unless you let us know the speed of the racehorse and the focus of the lens. It may be of interest to you, however, to know that at the finish on a short course a horse may travel about nineteen yards per second. Now supposing your lens is of 8 in. focus and you are 40 ft. from the horse, your shutter would have to work at rather a high speed, thus—

Horse moves 19 yards = 634 in. per second.  
40 ft. = 480 in.  $\div (8 \times 100) = 480 \div 800 = \frac{3}{5}$   
 $634 \div \frac{3}{5} = 1,140$ .

$\therefore$  The shutter must work at  $\frac{1}{1140}$ th of a second. When you get hold of such a shutter please let us know. The shutter mentioned in your query is utterly useless for the above purpose. (3) Probably; at any rate, we will let you know.

**ARTHUR JANE.**—We should certainly advise you to stick to your present lenses; you would find them far more satisfactory, as the other lens is merely a cross between the two you have and does not possess the rapidity of your portrait lens, which is a great essential. We admire your honesty, and should advise you to practice well till you can drop the amateur altogether. It is a new term to us, but we shall be pleased at any time to help you or any other "amateur-professional." Prints not yet to hand.

**TE WIRIRIU.**—You certainly could use your lens as you suggest, but you would not get the flowers more than life size, and only one plane would be in focus and the result would be delightfully fuzzy and naturalistic. The chloride print you sent is much better than the platinum. To calculate the decrease in ratio aperture it is only necessary to measure the distance between racked out lens and screen and divide by the aperture of diaphragm. We should certainly advise you to wait a little longer before getting a new lens.

## Quarterly Examinations in Photography.

### QUESTIONS.

- Forward a landscape print in which the clouds obtained for question 6 have been printed. The print must be toned, etc., but not mounted.
- An operator is using a 15 in. focus lens with a diaphragm of  $\frac{3}{4}$  in. aperture, and wishes to use a 9 in. focus lens with a diaphragm of same aperture,  $\frac{3}{4}$  in. What will be the relative exposure required for the same subject with the second lens under precisely similar lighting, and how is this determined?
- What is the action of a solution (a) of sugar, (b) glycerine, (c) potassium bromide, (d) potassium citrate, in the developer? Explain your answers.

(Latest Day for Answers—May 4th.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed to:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

N.B.—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," etc.—200 numbers AMATEUR PHOTOGRAPHER, commencing 1887; what offers? Wanted, hand-camera. — G. Phillips, 113, Lea Road, Blackheath, S.E.

83 recent numbers AMATEUR PHOTOGRAPHER; price 5s. 6d. — Evans, Minehead, Somerset.

AMATEUR PHOTOGRAPHER, vols. ix. to xiii. inclusive, all in reading cases; 7s. 6d. — No. 140, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

AMATEUR PHOTOGRAPHER, vols. iv. to xii. inclusive, bound, containing Wall's "Dictionary," and some extra numbers, clean and perfect; what offers? — No. 144, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Banjo.**—Banjo, five strings, handsomely plated hoops and fittings, ivory keys, walnut and ebony inlaid handle, splendid tone, and perfect order, suit lady or gentleman, excellent solo instrument, in leather case; cost £5 10s.; price 55s.; approval allowed. — Agnes Henry, 4, West Brixton, S.W.

**Bicycle.**—Safety bicycle, cushion tyres, ball bearings to all parts, ball pedals, well plated and enamelled, adjustable to any size rider, in splendid order everywhere, also spring back lamp and all accessories; cost £16; accept £3 10s.; great bargain. — H. Baker, Warwick House, 2, Acre Lane, Brixton, S.W.

**Cameras, etc.**—1890 half-plate mahogany camera, double extension, all latest movements, two double backs, double-hinged shutters, £3 5s.; Decoudun's photometer, 2 in. Gem time instantaneous shutter, 10s. 6d.; want quarter roll-holder; by appointment. — Lewis, 43, The Grove, Vauxhall.

Marion's quarter-plate camera, chemicals, dishes, printing frames, everything complete for beginner; £1—7, Ratcliffe Street, Haslingden.

For sale, a quarter-plate Lancaster's Instantograph 1891 camera, only in use a couple of months; price 30s.—Apply to S. Kirkham, Carlisle.

Half plate camera (Albion Albumenising Co., Glasgow), three double backs, and capital tripod, also burnisher (Rock's), half plate, all in first-class order; cost £9; for £4 15s.; without burnisher, £3 10s.; decided bargain; owner has bought whole-plate. — Macfarlane, Roselea House, Alexandria, N.B.

Lancaster's half International camera, two slides, sliding stand, leather case; 63s. — O. Michelmore, Broadstone, Dartmouth.

Perfectly new 5 by 4 Gutz patent camera, central swing, revolving disc for lens, every possible movement, four double backs, carriers for quarter-plates, also Eastman's film carriers; price £6 — No. 143, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Will exchange a new quarter-plate Duchess camera and three dark-slides, and bamboo tripod stand, also a patent Wood's washing apparatus, cost 112s., for a Chadwick or other good stereoscopic camera and slides, or cash 80s.; will send camera to Editor for approval if required. — No. 142, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Quarter Instantograph, fitted up as hand-camera, in polished mahogany case, four metal dark-slides, complete with tripod, etc., £2; Tyler's syphon washer, 3s. 6d., post free. — Hancock, 5, New Porter Street, Sheffield.

Whole-plate camera, square, leather bellows, with three double dark-slides; cost £2; for £4 15s. — A. Taylor, The Infirmary, Peterboro'.

Watson's half-plate light Premier camera, three double dark-slides, all splendidly finished and equal to new, solid leather case, with folding tripod; £25. — M. Dowell, Larkhill Terrace, Blackburn.

**Cameras, Lenses, etc.**—Quarter-plate Lancaster's Instanto, with superior rectilinear lens, two double backs, and stand, complete, 25s.; very superior dark box for 7 by 5 plates, 2s. 6d.; strong lead-lined developing sink, cost 20s., price 10s. — J. D. Pearson, Chilwell, Notts.

Lancaster's half-plate Instantograph camera, 3 double dark-slides, tripod, lens with instantaneous shutter, offers 7 Ross' half-plate portable symmetrical lens, 55s. — R. Hitchens, 34, Longcora Place, Cardiff.

Lenses, cameras, printing frames, mounts, tripod stands, all surplus, less than half cost; list on application. — A. Lansdowne Road 1, Tottenham, N.

Half-plate Lancaster's 1891 Instantograph camera, dark-slide, tripod, fitted rapid rectilinear lens, as new, for 70s. — 2, Hawthorn Villas, Slad Road, Stroud, Glos.

$\frac{7}{8}$  by 5 camera, Ross' No. 1 pattern, three backs, turntable, and Mavitta's patent stand, Ross' 8 by 5 rapid symmetrical lens, Kershaw shutter, finder, all in solid leather case; cost £23; will sell for £15. — W. Wright, Launston, Derryholme, Belfast.

Camera, double dark-slide, lens, good condition; cost £10 10s.; will take £5 5s. — Sent to Post Office, Netheravon, Salisbury.

Camera (Barbican Co.'s), quarter-plate, lens, two double dark-slides, and stand, complete; 23s.; suit a beginner. — No. 139, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Half-plate Underwood's Convention camera, lens, shutter, two double backs, waterproof case, and tripod, complete; £3 5s. — A. Spiller, Hillside, Hampstead Hill Gardens, London, N.W.

Whole-plate Stereoscopic Co.'s best light camera, every movement, three double backs, Optimus 9 by 7 R.S. and W.A. lenses, pneumatic shutter, focusing cloth, tripod, solid leather case, equal new; cost £28 10s. 6d.; price £17 10s. — Bygrave, 15, Canterbury Road, Brixton, S.W.

Superior half-plate camera, all movements, two double backs, £3; another ditto, with lens and double back, 30s.; offers? — G. Sinden, 63, Tresillian Road, St. John's, S.E.

Half-plate long-focus (Middlemiss) camera, three slides tripod, Optimus K.R. lens, Thornton-Pickard shutter, case; £3; perfectly new. — 33, Victoria Street, Sheffield.

Lancaster's whole-plate Instantograph, lens, shutter, slide, stand, also quarter set, as above, scales, lamp, large quantity of mounts, chemicals, dishes; bargain, 1.0s. — No. 141, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Half-plate camera, bellows bodied, tripod, and double back, 30s.; view lens, 5s. Wanted, whole-plate apparatus. — Charles, 37, Tunis Road, Shepherd's Bush, W.

Mawson's portable folding 9 by 7 camera, 2 double slides, in perfect condition, Fench's No. 3 wide-angle plano rectilinear lens, also Dallmeyer's No. 2 pattern wide-angle landscape lens for above camera, in tin case, mahogany plate boxes; price £6 6s.; cost about £12. — J. E. Thornburn, Low Moor, Aspatia.

Lancaster's patent stereo Instantograph camera, lenses, instantaneous shutter, with three double slides, cost £5 9s., price £3 10s.; International half-plate set, complete, only used once, £1; Dallmeyer's 1B lens, £3. — J. Biddle, 97, M'adock Street, Manchester.



Camera, full-plate, best quality extension, for sale, fitted with every convenient appliance, two lenses (Ross), four double dark-slides, carriers, Eastman's frames, tripod, in two portable strong leather bags, instantaneous shutter, and complete outfit, with dishes, trays, etc. Half-plate ditto, London Stereoscopic Co.'s best make extension. Owner will initiate, by correspondence, etc., any purchaser unacquainted with photography into its mysteries, and to assist them to surmount its rudimentary perplexities. — Apply, Executor, Florence Villa, Portwood, Southampton.

Lancaster's 1891 half-plate Instantograph, slide, tripod, and Optimus R.R. lens, as new; bargain, 88s.—83, Slad Road Stroud.

Quarter Instantograph, with three double backs, Silver-Ring Rectigraph, Chronolux time and instantaneous shutter, also case, to convert camera into detective; lot cost £7; what offers cash or exchange? Wanted, hot or whole plate set. — Wilkie, King Street, Cork.

Quarter Instantograph, reversible, four slides, pneumatic drop shutter, stand, lens; approval; deposit; 35s. cash. — X. Y. Z, 5, Douglas Street, Derby.

Chadwick's 6½ by 3½ stereoscopic camera, with 12 single Barnett's plate holders, pair of Beck's R.R. lenses, with Iris diaphragms, and Thornton-Pickard time shutter, in good condition; what offers? — Atherton, 9, Market Street, Wigan.

Lancaster's half-plate camera, good lens, folding tripod stand, two double dark-slides, printing frames, developing dishes, and chemicals; 70s.; or exchange, with cash, for Safety tricycle. — King, 524, Harrow Road, W.

Short-focus camera, quarter-plate, three double backs, case, two-fold stand, £3; hand camera, quarter-plate, fixed focus, made to order, with Shew's Eclipse lens, three double backs, finder, 66s.; short-focus camera, 5 by 4, six double backs, leather case, 90s.; above as new; no approval. — Mr. H. Miles, 19, Kensington Crescent, W.

**Hand-Cameras, etc.** — Hand-camera, Rouch's Eureka, cost £7 13s. 6d., covered morocco leather, nearly new; £5. — A. W. Miller, 9, Braydon Road, Upper Clapton, London.

Two 4-guinea Faciles for sale, new, perfect, never been used; £3 7s. 6d. each, net. — B., 8, Marsland Street, Stockport.

Gentleman will let No. 3 Kodak, quite new, on hire, 5s. weekly; camera's value must be deposited with Editor; would sell for cash 6 guineas; cost 8; will sell accessories cheaply. — E. W. T., 2, Walpole Gardens, Strawberry Hill.

Facile, for 12 quarter-plates, with sunk finder, new condition; £3 1s. — Stocks, Photographer, Uppingham.

Samuel's automatic detective, for 12 plates 3 by 2½, R.R. lens, instantaneous and time shutter, finder, complete in leather case, new; £2; exchange half-plate W.A. lens or offers. — Smith, High Street, Morley.

Turnbull's hand-camera, three double backs, special R.R. lens, good as new; 75s.—Collins, Chalfont, Bucks.

Hand-camera, Lancaster's Omnigraph, covered leather, new, in perfect order; price 20s. — J. E. Thornburn, Low Moor, Aspatia.

**Lantern, Optimus**, new, excellent condition; 20s.; or exchange. — Stevens, Mile Town, Sheerness.

**Lenses, etc.** — For sale, first-class cabinet portrait lens, almost new, 22s.; also two canvas backgrounds, exterior, 8 by 6 ft., plain one for groups, 10 by 8 ft.; the pair 16s.—Moreland, Portland Street, Lincoln.

Rectilinear lens (cost 60s.), Lancaster's half-plate, sell or exchange; whole-plate rectilinear required. — K. 189, Southampton Street, Reading.

Lancaster's half-plate instantaneous lens, with rotating stops and instantaneous shutter; price 18s. 6d.—Barclay, 6, St. Helen's Terrace, Hastings.

Ross' No. 5 portable symmetrical, 70s., new last season. — H., 55, Val Pleasant, Jersey.

Large portrait lens (Voightlander's), takes whole-plate; what offers? — Stocks, Photographer, Uppingham.

Suter B3 aplanatic lens, 50s.; fine quarter-plate lens, 15s.; solid leather case, arranged to carry apparatus and printing and developing outfit up to 12 by 10, baize-lined (by Stereoscopic Co.); 35s. — W. Palmer, 8, James Street, Covent Garden.

5 by 4 rectilinear and wide-angle, splendid lenses, 20s. each; fine tourists' telescope, 2 in. objective, in sling case, cost 63s., price 35s.; Lancaster's folding lamp, 3s. 6d.; quarter-plate tripod, 4s. 6d.—T. Hall, Skerton, Lancaster.

Excellent whole-plate rapid rectilinear lens, Lawley's best, new last summer, in perfect condition, as good as new, gives exquisite definition, price only 30s., on approval; also Underwood's shutter, Instantolux, time and instantaneous exposures, 2½ in. diameter, to fit the above lens, new last summer, and in perfect order, price only 10s. 6d. — R. F. Housman, 31, Regent Street, Lancaster.

Pair of Wray's 5 in. stereo lenses, new, Wray's 3½ in. wide-angle rectilinear, Scott's patent half-plate camera (made by Lane, London), with three double backs, condition equal to new. — W. Thompson, Gordon Spinning Co., Hollinwood.

Optimus R.R. lens, splendid definition, 6 by 5. new; cost 45s.; post free on receipt of 33s. — 102, Shaftesbury Road, London, N.

**Sets** — Quarter-plate set of accessories, complete, including 15 volt electric ruby lamp, in perfect order, together or separate. — Roberts, 66, Caversham Road, N.W.

Half-plate photographic outfit, equal to new, by good maker, and comprising Tourists' camera, with three double backs, three lenses (each with instantaneous shutter), cowhide bag, and shoulder strap, ash tripod and case, and all the sundry articles required in an amateur's outfit; full printed descriptive list on application. — Thomas M. Woodhead, 27, Forster Square, Bradford.

**Shutter** — Optimus plunge shutter, fits 1½ in.

hood, good as new; cost 30s.; price 20s.—Sanders, Square, Barastaple.

**Sundries.** — Decoudun's photometer, 5s.; view-finder, 2s.; retouching desk, 5s.; waistcoat camera, 21s.; enlarging camera, 21s.—Wm. Bell, Northallerton.

Whole-plate Eastman's roll-holder, 30s.; half-plate ditto, 25s.; one dozen Eastman's film carriers, for use in ordinary dark-slide, 4s.; Shew's changing bag, 6s.—Collins, Chalfont, Bucks.

Tricycle (by Starley and Sutton, Coventry), rear-steerer, Arab spring to saddle, in good condition; £6; or exchange photographic apparatus. — Clarence Jones, 44, Snear Brow, Blackburn.

**Tripods.** — Two half-plate tripods, sliding and folding, in good condition; 7s. 6d. each; 12s. 6d. lot; safety. — Mayfield, 20, Alexandra Road, Manchester.

For sale, Watson's Cyclists' tripod, for quarter or half-plates, new; price 15s.—O. Ustick, 108, King Henry's Road, London, N.W.

## WANTED.

**Cameras, etc.** — Best whole-plate camera, Watson's Acme preferred, three double slides, all brass-bound, with leather case, perfect condition. — Clare Bradshaw, Granville Terrace, Ramsgate.

**Cameras, Lenses, etc.** — 15 by 12 camera, lens, dark-slide, stand, and case; state particulars and price. — Davidson, 33, Stanhope Road, Tyne Dock.

**Camera Case.** — Half-plate camera case, 7s. 6d.—No. 138, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Hand-Cameras, etc.** — Detective camera, in good condition, by well-known maker, for hire, or cheap for cash. — A. C. G., 47, Huskisson Street, Liverpool.

Shew's half-plate Eclipse hand-camera, regular pattern, sound, complete; approval. — Full detailed description and price to Knowles, Woodlands, Bolton.

**Lenses, etc.** — Quarter plate wide-angle rectilinear or landscape lens; state focus and maker; cheap; approval. — 10, Albion Street, Miles Platting, Manchester.

Portrait lens, 7 by 5, French or English, second-hand, must be cheap; approval. — T. Stanley, 23, Lavender Grove, Dalston.

**Sundries.** — Chiming (long case or bracket) clock, or movements only. — Collins, Onalfont, Bucks.

Cheap, the following books: Chapman Jones's "Photography," Slingsby's "Flashlight," Heworth's "Lantern," Wall's "Dictionary," and other standard works. — A., 107, Broad Street, Birmingham.

A really genuine investment for a few hundreds in a going concern, paying a very handsome profit. Easy and pleasant occupation. — Address, in first instance (by kind permission), ART, care of the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C.

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POSTAL UNION.....	" " 6s. 6d.....	" " 13s. 6d.
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**PUBLISHING DEPARTMENT.** — All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.** — SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

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**NOTE.** — Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.** — All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.** — To ensure insertion, all Communications should reach the Editor on Tuesday.

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WOOD'S PRIZE MEDAL

Washer and Adjustable Rack.

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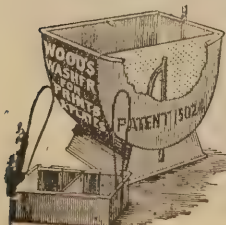
"A very excellent Washer." — Amateur Photographer.

"Washes prints with less attention and more thoroughly than any we have yet seen." — Photography.

"I find prints and plates are free from 'Hypo' in the time you elapse—a fact I should not have credited without actual trial." — W. JEROME HARRISON, F.R.S., Author of "A History of Photography," and "Photography for All," etc.

"Your Washer works splendidly." — FRANK M. SUTCLIFFE, Whitby.

JAMES WOOD, Chemist, 18, Northbrook St., LIVERPOOL.



## "AMATEUR PHOTOGRAPHER" PUBLIC SCHOOLS COMPETITION. OPEN TO BOYS UNDER SEVENTEEN YEARS OF AGE.

Class I. Landscape, "Amateur Photographer" Silver and Bronze Medals.

II. Portraits, Including Groups " " "

III. Animals " " "

IV. Architecture " " "

**NOTE.** — Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date June 17th.

## "AMATEUR PHOTOGRAPHER" Ladies' Second Photographic Competition

PRIZES.

FIRST PRIZE. GOLD MEDAL.	SECOND PRIZE. SILVER MEDAL.	THIRD PRIZE. BRONZE MEDAL.
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(These Medals, of the smaller series, will be appropriately mounted as Brooches or Pendants if desired.)

**SUBJECTS:** Landscape or Seascap—Landscape with Figure—Portraiture or Figure Study.

**NOTE.** — Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date August 22nd.



# The AMATEUR PHOTOGRAPHER

Telephone No 1645  
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Office: 1, Gress Lane, Ludgate Hill, London, E.C.

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FRIDAY, MAY 1, 1891.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

OUR VIEWS.—Fourth Monthly Lantern-Slide Competition—A "Monday Evening" at the offices of the AMATEUR PHOTOGRAPHER—A Society for Guernsey—Mr. Valentine Blanchard Lectures on "Art and Photography" at the Polytechnic—Course of Lectures upon Photography by Mr. H. Chapman Jones—The AMATEUR PHOTOGRAPHER "Dark-Rooms" for 1891—"Holiday Resorts and Photographic Haunts" Contributions Wanted—The "Public Schools" Competition.

LEADER.—Home Portraiture.

LETTERS TO THE EDITOR.—Magnification for Photo-Micrography (T. G. P. Vereker) Mr. Sutton's Process (G. J. Browne)—Circular Detective Cameras (R. Young)—What is Meant by the Term "Instantaneous" as Applied to Photography? (Louis Meldon)—What is an Amateur? (An Enquirer)—Photography Without a Lens (Alfred Maskell).

COMMUNICATED ARTICLES.—Photo-Micrography (Pringle)—Chemistry for Photographers—(Bothamley).

APPARATUS.—Gott's Portable (Featherweight) Camera—Slater's New Dark-Room Lamp—King's Popular Hand Camera—Fitch's Focussing Screens—Gray's "Nameit."

NOTES.—Art Colour Photographs—From Edinburgh—Round and About the Clubs—"Thursday Evenings" at the Camera Club—For Novices.

AMATEUR PHOTOGRAPHER List of Dark-Rooms.

EXHIBITIONS.—Crystal Palace—Gloucester.

QUARTERLY EXAMINATIONS IN PHOTOGRAPHY.

SOCIETIES' MEETINGS.—Ashton—Birmingham (New Club)—Birmingham—Bristol—Croydon—East London—Faversham—Glasgow and West of Scotland—Hackney—Holborn—Huddersfield—Ireland—Leeds—Newcastle-on-Tyne—North Middlesex—Paisley—Putney—Rossendale—Sheffield—Southport Social—Spenn Valley—Warrington—West London—Woolwich and District.

THE slides contributed to the fourth Monthly AMATEUR PHOTOGRAPHER Lantern Slide Competition were passed through the lantern at our offices on Monday last, and the prizes awarded to the following competitors:—

### First Prize (Silver Medal).

EDWARD BRIGHTMAN .. .. Bristol.

This gentleman's contribution were a view of Wells Cathedral, west front, and a magnificent slide of the altar piece at Christ Church, Bristol. This slide was far and away the best sent to the competition.

### Second Prize (Bronze Medal).

W. LAMOND HOWIE .. .. Eccles.

The best of the two slides sent by this competitor was certainly the "Interior of Church, Ober-Ammergau," a picture full of detail, both in light and shade.

### Third Prize (Certificate).

G. F. WILLS .. .. Wigan.

Two very fine views of Wells Cathedral, in which point of view and technical work are both excellent.

The remaining sets, sixteen in all, were classed as follows:—Six sets 1st, seven 2nd, and three 3rd class. The full list, with titles, plates used, and developer, is given in the *Photographic Reporter* for this month.

THE exhibition of the 1890 AMATEUR PHOTOGRAPHER Prize Lantern-slides brought together at our offices a large audience; in fact, the rooms were packed to the door, and the slides received, as they have done whenever they have been shown, a most hearty welcome. The novel feature of introducing each set by a portrait of the prize-winner projected on the screen, added much additional interest. It was gratifying to us to find many ladies amongst the audience, and the success of our invitation will prompt us to repeat such evenings, commencing in September next. On every fourth Monday a popular lecture or demonstration upon photography will be delivered, after which discussion will be invited, and an exhibition of lantern slides will conclude each evening's entertainment. We have no doubt that our "Monday evenings" will become as popular and as well attended as the Camera Club "Thursday evenings." We are preparing a syllabus of lecturers and demonstrators, and shall be glad of suggestions from any of our readers.

It is proposed to start a photographic society at Guernsey. We shall be very pleased to supply further particulars to any of our readers who may be wishful to assist the movement.

NEXT Wednesday Mr. Valentine Blanchard will commence his course of four lectures on "Art in Relation to Photography," at the Polytechnic Technical Schools, Regent Street. Fees for the course, one guinea. Mr. Blanchard is so well known as an artist, as well as a photographer, that we feel sure many of our readers will gladly avail themselves of the opportunity of attending his lectures, from which, we are sure, much may be learnt.

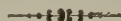
ANOTHER course of six lectures are to commence at the Central Institution, City and Guilds of London Institute, Exhibition Road, South Kensington, on Wednesday, the 6th, by Mr. H. Chapman Jones, F.I.C., F.C.S., etc., on "Photography," treated from a practical and scientific point of view. Fee for the course, five shillings.

IN accordance with ancient custom, we publish our list of "Dark-rooms," which is fairly complete, but we would ask our readers and also all photographic dealers or professional photographers to advise us if they have a "dark-room" which may be placed at the service of the travelling amateur photographer. We cannot spare space to publish the "dark-rooms" that have been placed at our disposal



on the Continent, but we have a very considerable number, and can give a private letter of introduction to subscribers practising photography in practically every city of any size on the Continent and in our English colonies.

Especially we wish to secure the use of "dark-rooms" in all principal sea-side towns and touring centres. We shall also be glad to hear from the owners of the different steamboat routes as to the accommodation, photographically, for passengers on board the boats, especially the Scotch and Irish boats.



VERY shortly we shall be able to supply very complete information respecting "Holiday Resorts and Photographic Haunts," and shall publish a list of the names of districts and towns which have already been dealt with in these columns, and will then ask our readers to kindly contribute short articles upon places of interest to the photographer that are not included in the list. In this way all may help to make our "Holiday Resorts and Photographic Haunts" a complete photographic gazetteer. The following simple rules will help contributors:—

- (1) The best starting point, the nearest large town.
- (2) Distance to places, and objects of interest.
- (3) The best route, conveyance, and cost.
- (4) If permission to photograph be required.
- (5) The situation of the subject, and at what time the light is most suitable for securing a photograph.
- (6) The nearest "Dark-room" available.

Contributions should not exceed 500 words, must be legibly written on one side of the paper only, and no attempt should be made to give discursive accounts of the objects to be photographed, but each account should be practical and brief.



WE have amongst our subscribers many masters of public boys' schools, and would specially call their attention to the "Public Schools Competition" we are promoting. Some thousand schools have been selected, and we are sending a circular letter to the head master enclosing an entry form, and asking him to draw the attention of the boys under his charge to the conditions, which we may add are not of an onerous character. These will be posted on the 4th inst., in order to be in the hands of the head masters on or about the first day of term. We shall, of course, be pleased to forward entry forms to any public school boy under seventeen years of age, upon receipt of stamped addressed envelope. The last day to send in photographs is fixed for the 17th of June.



### HOME PORTRAITURE.

AN important point, and one often neglected by the amateur operator, is the direction of the eyes. It is no uncommon thing to see a rather fine large head, with good gradation and modelling, facing a point slightly to one side of the camera, probably about six inches from the lens, whereas the eyes are directed to a point at least three times that distance from the camera. In other cases the eyes are elevated till it might be assumed that the sitter was trying to illustrate the forcible but not over-elegant phrase, "a dying duck in a thunderstorm." The question of how to avoid the dying duck expression and how to obtain a pleasing expression on the sitter's face is one by no means easy to decide, the latter portion, at any rate. A very good plan is to place a decent-sized mirror in front of the sitters, and allow them to look at themselves in that, when, as a rule with sitters of mature age and sound judgment, it is by no

means a difficult operation for them to so command the facial muscles as to put on a pleasing look when they can see themselves. The old formula of "Wet your lips and look pleasant, please" has almost disappeared, simultaneously with the habit of the operator turning his back on the sitter. There is a tale, the veracity of which, however, we will not vouch for, that a tintype worker used to draw on the once whitewashed wall of his studio and tell his visitors to "look at that and look pleasant," possibly a difficult matter. We have personally, however, worked in a studio where it was customary to tell sitters to look at a little gaudily-painted box, and at the same moment as the lens shutter was raised, a little Jack-in-the-box sprang up and "put his thumb unto his nose and stretched his fingers out." The effect of this on the sitters was marvellous; in some a genuine home-made Cheshire grin appeared, in others the jaw dropped in surprise, in juveniles the eyes extended; so finally poor Jack was relegated to the shelf, as these results were by no means artistic.

It is far better to use merely a looking-glass; some writers use a picture, others have recommended a clock, etc. Whatever is used, however, let it be a fair size, and tell your sitter not to be afraid, but to blink his or her eyes as usual, and not to fix them in a steady glare, as though trying to freeze somebody. Above all things, let your sitters be natural. If a lady, give her a piece of needlework, and tell her to work at it, then drop it in her lap, and look up as though going to speak. For young ladies a doll, animate or inanimate, may be of use; in the former case, however, it is preferable to have one that will sleep—some won't, or at least we have come to that conclusion. For a gentleman, give him a stick, cigarette, cigar, or pipe, or let him stand by a table on which lie hat, gloves, and stick, and tell him to begin to pick them up. For smaller boys, a top or game may be utilised. Who does not know Rejlander's picture, "The Game of Chess"? Here there is an excellent chance for a group; two persons playing chess, one leaning back looking rather pleased, the other leaning over the board "with bent brow and eye intent," whilst behind a third may stand smiling at the triumphant player. Call this "A Poser" or "In a Fix," what you please, only whatever you do carry the thing out properly. Place the chess men in a difficult position—not as we saw them a week or two back in a picture, a chess board without a single piece lost; not that we mean to infer difficult situations do not occur then, but they are more likely to at the end of a game. Then again, for a group of four, what is better than a scientific rubber of whist? Here, too, put your accessories in; the markers, the second pack, the played cards in the middle of the table, the tricks won, etc. We may possibly make the title tell the tale; for instance, "The call for trumps." Or again, let one party be scoring, the other counting the tricks—"Two by tricks and honours easy;" or a more difficult subject still, "Trumped my ace, by gad, sir!" Surely this recalls the choleric, stout old gentleman, rising in hot haste, his hand flung down, the chair upset behind him, whilst the luckless wight who has been unfortunate enough to "trump my ace," stares in shivering astonishment at his wrathful partner and triumphant opponents, one of whom leans back enjoying the joke with a rude guffaw, the other calmly smiling at the wretched culprit. We might go on giving our readers hints without end, but must content ourselves by impressing on them the importance of having everything in harmony. Give your sitters something to do or hold that they are in the habit of using, and they'll immediately fall into natural attitudes; but give a man a violin or something he knows nothing about, and he will immediately look as though it was some strange thing, and nothing you can do will prevent it.



## Letters to the Editor.

### MAGNIFICATION FOR PHOTO-MICROGRAPHY.

SIR,—I read with much astonishment the extract you copy on page 282 of the *AMATEUR PHOTOGRAPHER* of the 17th inst., when it appeared in the *International Journal of Microscopy*, and came to the conclusion that some of the context of Mr. Nelson's paper must have been omitted, as I do not think he would be prepared to support the impression the extract gives, namely, that an inch objective is the highest power required for useful work in the photo-micrography direction.

The figures also do not agree. The initial power of a lens in microscopy means the number got by dividing ten (10) inches, the normal distance of distinct vision, by the nominal focus of the lens; thus an inch objective magnifies ten diameters, and a quarter of an inch forty diameters, etc.

Now, if an "eye-piece giving twenty times the initial power of a lens" is applied to an inch objective, the result is 200 diameters, not 1,000.

There is no doubt 1,000 diameters can be got with an inch objective in many ways, but using it as above it would want an eye-piece of a tenth of an inch focus, magnifying 100 diameters, and, optically, it is more rational to reverse the operation, and have an inch eye-piece and a tenth of an inch objective, as the errors of the first magnification in this latter case would be magnified ten times, instead of a hundred times.

Again, to get a useful magnification of 1,000 diameters it means a resolution of 100,000 to 200,000 lines to an inch, and this requires a high numerical aperture, which would cause the lens to work very close to the object. Now at present there are no inch objectives made, and opticians as yet cannot make them of this high aperture; and if there were, they would, as far as one sees, have no practical advantages over the high powers which are really meant for this work.

I apologise, Sir, for the length of this letter, but think it is unfair to let statements go forth which might deceive beginners, and disgust them with an interesting field of research; and why the *International Journal of Microscopy* did not give fuller details I do not understand.—I am, Sir, yours, etc., T. G. P. VEREKER.

NOTE.—The statement is as given in the *International Journal of Microscopy*.—Ed. AM: PHOT.

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### MR. SUTTON'S PROCESS.

SIR,—In your report of the proceedings of the Camera Club Conference you give an extract from a paper read by Mr. Sutton on a "new" mechanical process.

Such a method never having been published, and Mr. Sutton being the first to give same to the world, is justly entitled to call it new, but that Mr. Sutton was not the first in the field the following facts will show.

Four years ago I had the honour of demonstrating a similar process to a well-known firm of photo-etchers, who pronounced it to be of no commercial use for block work, but as a means for preparing gelatine negatives for mechanical work it was invaluable.

*Process.*—A grained gelatine negative is immersed in a weak solution of ferricyanide of potassium, well washed, the superfluous moisture wiped off, slowly heated by the fire, the final heating being given on a piece of smooth zinc over a Bunsen flame. It is then rolled with a hard lithographic roller, bronzed, and forthwith used for printing.

Negatives treated thus give results equal to, if not superior to, the wet-plate negatives.—Yours truly, G. J. BROWNE.  
43, Smollett Street, Kensington, Liverpool,  
April 20th, 1891.

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### CIRCULAR DETECTIVE CAMERAS.

SIR,—I have a suggestion to make with regard to these cameras, which I think, if it were adopted, would make this particular form of instrument more popular than it is at present. The circular dry plate which is manufactured for these cameras, and round the circumference of which the photographs, generally six in number, are consecutively taken, has, I think, two distinct disadvantages—(1) the possessor of one of these instruments may perhaps only wish to take two or three snap-shots during the one day, and therefore his desire to develop and see the result of his work—a desire generally so eager with an amateur—has to be

restrained till the complete series of six is taken, in order to avoid the waste of the remaining portions of the plate; (2) as the exposure is made by a partial revolution of the circular plate on its axis, and is constant, and as the actinic intensity of the light varies, it follows that some of the exposures made on this one plate will require a longer development than the others, and this, I take it, cannot be attained when the whole series of six are developed together in the one developing dish.

Now, my idea is, not to make any alterations in the external appearance of the camera—let it be circular as before, and with its usual circular internal carrier—but let this carrier be provided with grooves to carry six square plates, each plate to be brought in turn before the lens by a partial revolution of the carrier as in the old form. The camera could then be fully or partly charged as wished, and each plate could be individually developed, which would, I think, be a distinct advantage.—I am, Sir, yours truly,  
Cork, April 25th, 1891. R. YOUNG.

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### WHAT IS MEANT BY THE TERM "INSTANTANEOUS" AS APPLIED TO PHOTOGRAPHY?

SIR,—I have reason lately to wonder what meaning is intended to be attached to the term "instantaneous," by which a class in our exhibitions is usually distinguished. Instantaneous applies to a period of time, and being a wholly undefined period leaves the class it qualifies equally undefined. I always understood the term to apply to a duration of time within which moving objects might be photographed, and that a picture is not fairly qualified for the class unless it contains a moving object. I have, however, recently seen medalled pictures in this class which according to my understanding of the class are unqualified, being simply landscapes with figures, the figures being quite secondary to the landscape. The difficulty attending the production of rapid work is such that it is impossible for such work to compete with landscapes where the judging is done without reference to the objects of the class or the difficulties attending the production of the work. In my opinion the word "instantaneous" should be discontinued, and the term "moving objects" substituted. This term will exclude unqualified and doubtful pictures, and place more clearly before the judges the characteristic features intended to be most prominent in the consideration of merit.—Yours truly,  
LOUIS MELDON.

Dublin, April 24th, 1891.

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### WHAT IS AN AMATEUR?

SIR,—Living in London, as you may suppose, I paid a visit to the Crystal Palace Exhibition, and was very pleased with the day's outing; the show was well worth the visit. But I was much struck by noticing there a picture, "My Sister," by W. Smedley, which I believe is the same as you reproduced in the *Photographic Reporter* recently. The fact that it was so reproduced is not at all extraordinary, it deserved to be so treated, but what was extraordinary was the fact that in the catalogue it was marked 10s. 6d.! This really surprised me, for I understood your competitions were only open to amateurs, and that amateurs would not, or rather should not, sell their work.

I then began to investigate further, and found pictures, marked with prices, in the following names, entered in amateur classes: Capt. G. H. P. Burne, W. H. Whittard, C. Higinbotham, Leslie Selby, George H. Firth, Louis Meldon, and Miss J. S. James.

I should like to know, Sir, whether, under these circumstances, the pictures being shown at a public exhibition, these exhibitors, if they were so before, can any longer be considered amateurs, and should be glad to hear the expression of your own views and those of your readers upon the point.—Yours, etc.,  
April 27th, 1891.

AN ENQUIRER.

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### PHOTOGRAPHY WITHOUT A LENS.

SIR,—Allow me to correct a printer's error in my paper on "Pinhole Photography" in your issue of last week. Page 297, first column, line 19 from bottom, for 2,560 secs. read 256 secs.—Yours, etc.,  
ALFRED MASKELL.



**To Remove Silver Stains from Negatives.**—A solution of 1 part of iodide of potassium in 20 parts of water is recommended. The negative is laid in this solution until the stains disappear. The bath can be used repeatedly until it becomes milky. The negative is not injured in any way by the solution.



## Photo-Micrography.—VIII.

BY ANDREW PRINGLE.

### PRINTING.

WE now, in the usual order of photographic matters, come to consider the processes which we deem the best suited for producing paper or other prints from our negatives. It will be at once realised that whatever may be the chief *desiderata* for printing with a special view to artistic results, our required qualities are: (1) sharpness of detail, and (2) a long and perfect scale of gradation in many cases. We certainly do not need much gradation in all cases, but our printing process—if we propose to adopt one only—must have the power of giving good gradation when we are dealing with a certain class of subject, such as stained preparations of physiological specimens, as well as preparations of insects, sections of rock, and, in short, any subjects not consisting of merely opaque and absolutely clear tissues. This is as much as to say that we must either use more than one printing process, or else choose one process capable of yielding different kinds of results at our will.

We may say at once that it may be taken that all processes of printing on so-called matt surfaces are in most cases barred at the outset, on account of the impossibility of getting on such surfaces prints with details microscopically sharp; it is quite certain that a smooth surface will give sharper detail than a surface rough in even a small degree, more particularly as the image on the latter sinks more or less into the body of the paper. Therefore, unfortunately, we must shelve for our purpose the fine platinotype process as well as the other processes of printing on plain paper. Still, it is not to be denied that the platinotype process and others of the same nature may be used with good effect for delineations of what I may call "general appearances," where we wish to show merely the coarser details of an object and the relations of position between one part and another. For instance, I employed to my great satisfaction the platinotype process in the case of some large sections of diseased bones and joints where there was no need to show the histological details of the specimens.

From a broad point of view there need be no great departure from usual procedure with any of the processes which we may adopt; but at the same time it may be useful to point out certain matters tending to make the best of common processes for our particular necessities, and on a few of these points I propose to dwell in this chapter.

To begin with the albumen process. It is pretty evident that in order to obtain the sharpest prints we must have perfect contact between our paper and our negative. This is best obtained by having strong pressure on our paper by means of specially strong springs in the printing frame. The pad for backing the paper in the frame should be of some flat-lying material, such as sheet india-rubber, and not of felt or any such uneven material. Moreover, it is even more vital in our work than in ordinary printing that the negative and paper should be allowed to attain the same temperature before the exposure is allowed to begin; if this is neglected, perfect contact between paper and negative will not be obtained; indeed, if the temperatures of paper and negative are very different, and if there be much moisture in the air, the paper will actually leave the negative in places, and a blurring will result, as doubtless many readers have found.

As to tone, this is wholly a matter of taste, but it will probably be found that a warm tone is less suitable for our

work than a blue or blue-black. To obtain tones of these latter classes the sulpho-cyanide process or Mr. Clark's platinum toning process may be used; but if a warm tone is desired—as, for instance, to imitate some of the ruddier stains—then the ordinary gold toning solutions may be used, care being taken not to carry the toning process too far. It must, however, be remembered that when toning is stopped too short there is grave danger of the results not being permanent.

The gelatine-emulsion papers, known by such names as "aristotype," are very suitable for this kind of printing. The amount of fine detail rendered by these processes is greatly in their favour, and by their use we have at command a fair variety of tones. The only caution I would offer to those who may be using these processes for the first time is that the tone must be judged by transmitted, not by reflected, light. If the tone as seen by transmitted light has any red left in it, the toning is not complete, however blue the prints may appear by reflected light as used for judging the progress in albumen processes.

But in my own work I always use bromide paper for printing photo-micrographs. The quality of result can be varied to a very great extent, and a negative of very poor technical quality can often be made to yield an excellent print. And it is not to be forgotten that frequently the best negative we can get from a preparation is not at all a good negative from the technical photographic point of view; and it is a strong point in favour of any process if we can obtain from a poor negative a good or moderately good print. Moreover, the tones to be got from the bromide papers appear to me well suited for the printing of scientific subjects; the warm blue-blacks and the clear high lights are just what we require.

I always use the ferrous oxalate developer for work of this kind, and I do not think that there is any better developer for the purpose. According to the result desired and the nature of the negative, we may vary our developer, but the variations have not very wide limits. As a rule, a solution strong in iron will give stronger shadows, provided the exposure is kept down to suit the strength of developer; whereas by keeping down the proportion of iron we may produce results with more harmony or "softness." So when I am dealing with a subject of violent contrasts, I use about one of my iron to eight of oxalate, but if my negative is weak from any cause, I keep down the exposure and use about one of iron to four or five of oxalate. Bromide is always used in the developer, but half a grain to each ounce of developer is enough.

In making stock solutions of iron and oxalate there should be no difficulty. In a large bottle I keep always a quantity of water, into which is put from time to time a quantity of the oxalate; the bottle gets a vigorous shaking now and then, and there is always some oxalate undissolved at the bottom of the bottle; the temperature is always about 60 degs. Fahr. The bottle should be shaken just before any of the solution is taken out to make developer; and the solution should be filtered before use. The iron solution is made thus: to about a pint of water I add one drachm of sulphuric acid, and with this acid water I dissolve as much protosulphate of iron as the water will take up at 60 degs. Fahr. Some iron should be always visible at the bottom of the bottle, and this solution will keep good for a very long time—months anyhow. These solutions being made up, a "normal" developer may consist of one part of the iron to six parts of the oxalate solution, half a grain of bromide of potassium being added to each ounce of developer.

There is no harm in using any of the quinol developers formulated by many writers and manufacturers; in fact, some of these give results as good as can be got by ferrous

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



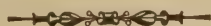
oxalate; but my own experience is that ferrous oxalate gives, if anything, the best tone with the greatest certainty and least chance of failure. Eikonogen I do not like nearly so well for this purpose, but I admit this may be from my less experience of eikonogen for the purpose. The following formula has answered better in my hands than any other eikonogen formula I have tried; it is of American origin, and answers well for lantern slides:

Water .. ..	500 parts .. ..	1 oz.
Sodium sulphite ..	10 " .. ..	10 gr.
Eikonogen ..	5 " .. ..	5 "
Potassium carbonate	2 " .. ..	2 "

This keeps well for a week or so, and is good for giving images full of detail without great density.

No special steps are required for printing micrographic images on bromide paper; I take for granted that every reader uses acidulated water for the first washing after development with ferrous oxalate.

It need hardly be said that a photo-micrograph shows better as a lantern slide than in any other shape; and for slides we may use the ordinary lantern plate of gelatine-bromide, or collodion, or albumen. The ferrous oxalate developer may be used for gelatine bromide plates; here at least I decidedly prefer iron development to alkaline. But for the very best results the albumen process should be used. Unfortunately, I cannot here describe this beautiful process.



## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 245.)

**Nitric Oxide**, NO, is formed by the action of moderately strong nitric acid on copper, mercury, and some other metals, or in a purer condition by the action of nitric acid on ferrous salts. It is a colourless gas, almost insoluble in water, not combustible, and only supporting combustion under certain special conditions. It is characterised by its property of forming red-brown fumes when it comes in contact with air or any other gas containing free oxygen. The red-brown product consists of nitrogen peroxide if the oxygen is in excess, and of nitrogen peroxide mixed with some nitrogen trioxide if the nitric oxide is in excess.

**EXPERIMENT 123.**—Into an apparatus similar to that used for the preparation of hydrogen put 15 grammes of copper turnings, and pour down the funnel-tube about 40c.c. of a mixture of equal volumes of water and strong nitric acid. Observe that the flask at first becomes filled with a red-brown gas, which afterwards disappears, but the gas which bubbles through the water in the pneumatic trough forms red-brown fumes as soon as it comes in contact with the air. Collect two bottles of the gas over water in the usual way, and into one introduce a lighted taper and observe that the taper is extinguished and the gas does not take fire. Bring the other in contact with a similar bottle filled with air, and allow them to remain with their mouths together for some minutes. Observe that a red-brown gas is formed, but if the bottles are placed with their mouths under water the red-brown gas is absorbed and the water rises in the bottles.

**Nitrous Oxide**, N<sub>2</sub>O, is a colourless, odourless gas, obtained by the action of heat on ammonium nitrate, NH<sub>4</sub>NO<sub>3</sub>=N<sub>2</sub>O+2H<sub>2</sub>O. Like oxygen, it rekindles a glowing splint of wood, but it is easily distinguished from oxygen by its much greater solubility in cold water. When inhaled, it first produces excitement, which is manifested in various ways, and hence the gas is often called laughing-gas. If breathed for some time, it produces insensibility, sufficiently complete

and lasting for a sufficient length of time to permit of the performance of minor surgical operations, such as the extraction of teeth.

### THE HALOGENS.

The halogens, haloid elements, or haloids are fluorine, chlorine, bromine, and iodine, four elements that are closely related to one another. The term halogen (Greek, *hals*, sea-salt; *gen*, to produce) is derived from the fact that by combination with potassium and sodium these elements form compounds very similar to common salt or sea-salt.

**FLUORINE** occurs chiefly in combination with calcium, forming calcium fluoride, CaF<sub>2</sub>, which constitutes the mineral *fluorspar* or *fluorite*, also known as Blue John and Derbyshire spar. It occurs massive or crystallised in cubes: colourless, yellow, green, rose, and purple. Fluorine occurs also in combination in small quantity in the bones and teeth. The element itself can only be isolated by the action of a powerful electric current on liquefied hydrogen fluoride in complete absence of water. It is a colourless gas which combines explosively with hydrogen even in the dark, decomposes water with formation of hydrogen fluoride, HF, and liberation of oxygen, and combines directly, even at the ordinary temperature, with almost all the elements.

The compounds of fluorine with the other elements are termed *fluorides*. The metallic fluorides, with the exception of those of sodium, potassium, and silver, are insoluble in water, but dissolve in dilute acids.

**Hydrogen fluoride**, HF, is most easily obtained by the action of strong sulphuric acid on calcium fluoride.

**EXPERIMENT 124.**—Into a dish made of platinum or sheet-lead put some powdered fluorspar, add some strong sulphuric acid, and warm *very gently*. Observe that a colourless, fuming, intensely irritating, and strongly acid gas is given off. CaF<sub>2</sub>+H<sub>2</sub>SO<sub>4</sub>=2HF+CaSO<sub>4</sub>.

This gas is very soluble in water, and the solution constitutes the ordinary hydrofluoric acid, an intensely corrosive acid, which must be handled with the greatest care. Both the solution and the gas attack glass rapidly, and hence the solution must be kept in leaden or gutta-percha bottles. For the same reason the solution or the gas can be used for etching on glass.

**EXPERIMENT 125.**—Coat a piece of glass with bees-wax by gently warming it, and when the wax has hardened, scratch a design upon it with a needle, so as to expose the glass beneath. Place the glass with the waxed side down over the dish in which hydrogen fluoride is being evolved. After a short time remove the wax, and it will be found that where the glass was not protected by the wax it has been corroded.

Fluorine is characterised by an especial attraction for the element silicon. Glass contains silicon in combination with oxygen forming silica, SiO<sub>2</sub>. When silica comes in contact with hydrogen fluoride, the following changes take place: SiO<sub>2</sub>+4HF=SiF<sub>4</sub>+2H<sub>2</sub>O. The silicon fluoride SiF<sub>4</sub> is a gas, and hence the solid silica becomes converted into liquid and gaseous products. A similar change takes place not only with pure silica, but also with glass, porcelain, and all substances that contain silica.

**CHLORINE** is rarely found in the free state in nature, but occurs in large quantities in the form of sodium chloride or common salt, and also in combination with magnesium and potassium. The element itself is obtained, directly or indirectly, from its compound with hydrogen, and therefore we will investigate the latter first.

Chlorine forms with hydrogen only one compound, *hydrogen chloride*, HCl, or *hydrochloric acid gas*, which can be obtained by the direct union of its constituents, but is more easily prepared by the action of strong sulphuric acid on sodium chloride or some other chloride.



EXPERIMENT 126.—Put some salt in a test tube, and add a small quantity of strong sulphuric acid; a colourless, strongly fuming, strongly acid, and irritating gas will be evolved.  $\text{NaCl} + \text{H}_2\text{SO}_4 = \text{HCl} + \text{NaHSO}_4$ .

EXPERIMENT 127.—Into a flask of 500 c.c (20 oz.) capacity, fitted as in fig. 22, put 30 grammes of salt. Arrange a dry gas bottle, mouth upwards, so that the delivery tube from the flask just reaches to the bottom of the bottle, and cover the mouth of the bottle with a slightly greased card, in which is cut a notch to allow of the passage of the delivery tube. Dilute 50 c.c. of strong sulphuric acid with 25 c.c. of water, and pour part of the mixture down the acid funnel. When the collecting bottle is full of gas (*i.e.* after fumes have been escaping from the mouth for some time), remove it, cover the mouth with a piece of glazed paper slightly greased with lard, and put another bottle in its place. (a) Remove the paper cover from one bottle, and observe that the gas fumes strongly when it comes in contact with the air; introduce a lighted taper into the gas, and observe that the taper is extinguished, but the gas does not take fire. (b) Invert the second bottle with its mouth under water, and observe that the water rapidly rushes up into the bottle, showing that the gas is easily absorbed by cold water.

EXPERIMENT 128.—As soon as the second bottle of gas in the preceding experiment is full, put the end of the delivery tube into a small beaker containing 25 c.c. of water. Observe that at first the gas is completely absorbed, but after a time some begins to escape into the air, and at last the liquid is saturated and no further absorption takes place. (When the evolution of hydrogen chloride slackens, pour some more of the sulphuric acid down the acid funnel). You have now prepared some strong hydrochloric acid, which is simply a solution of hydrogen chloride in water.

N.B.—All the experiments with hydrogen chloride should be done in the open air or in a place where there is good draught.

Ordinary hydrochloric acid is made in a similar manner, and of course is similar in composition. When pure, it is colourless, but fumes when exposed to air, and although corrosive is less energetic in this respect than nitric or sulphuric acid. It has very little action on copper, lead, silver, or mercury at the ordinary temperature, but rapidly attacks tin, zinc, and iron, with evolution of hydrogen and formation of chlorides.

EXPERIMENT 129.—Heat a small quantity of the strong solution; observe that hydrogen chloride is evolved.

When a strong solution is heated, it at first loses hydrogen chloride faster than it loses water; a weak solution under the same conditions loses water faster than it loses hydrogen chloride. In both cases as soon as the liquid contains 20 per cent. of hydrogen chloride, if the heating is continued, water and hydrogen chloride are given off in constant proportions, and the liquid can be distilled under ordinary atmospheric pressure, without any alteration in its composition. The boiling point of the acid of this strength is 110 deg. The commercial concentrated hydrochloric acid contains 36 per cent. of hydrogen chloride, and the strongest solution that can be made at the ordinary temperature and pressure contains 42.6 per cent.

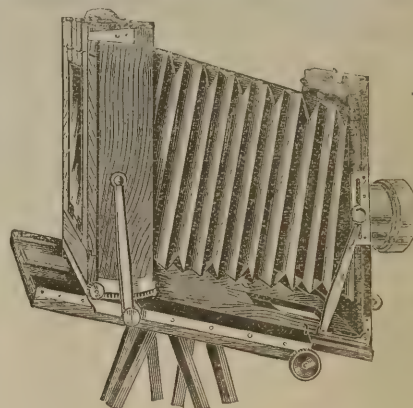


**A Photographic Reading Room and Club at Cheltenham.**—Photographic dealers are enterprising people, and Messrs. Thomas Brothers, of the College Pharmacy, Cheltenham, are proving themselves to be no exception to the general rule. They have, we understand, recently fitted up a complete suite of rooms for the use of amateur photographers. They include a reading and general club-room, provided with all the current photographic publications and works of reference, a well fitted enlarging room, two well appointed dark-rooms, cloak-room, etc. We should say that this club will become a great photographic centre.

## Apparatus.

### GOTZ'S PORTABLE (FEATHERWEIGHT) CAMERA.

THIS camera, of which we give an illustration, is one of the most portable and compact that we are acquainted with, and contains

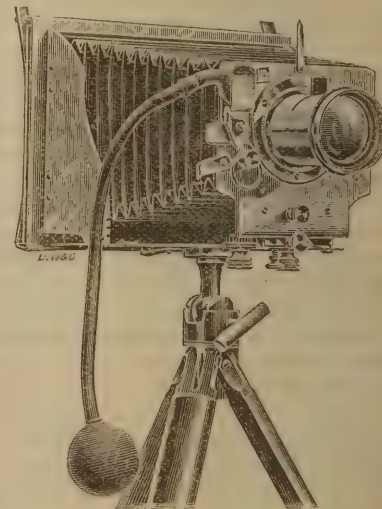


many novel movements which admirably adapt it to the requirements of all imaginable contingencies. It is capable of very long extension, and yet can be used for a lens of the shortest focus without any fear of the base board cutting off any of the view, as both the front and back of the camera can be freely moved along the base board. This double movement has also the advantage of enabling the weight

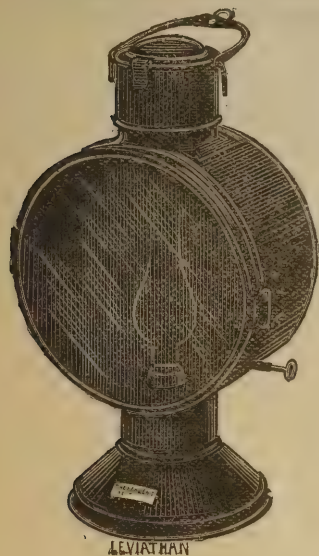
of the camera to be kept over the centre of the tripod, the fault of many cameras being that under certain—and those frequent—conditions, the whole of the weight is thrown in front of the tripod. The back swing is from the centre, and the arrangement by which this is secured causes the focussing-screen to come next to the base board when the camera is shut up, so giving it absolute protection. This swing is obtained without the use of the usual fork, and so does away with the guess work in fixing the back of the camera. The back can also be swung horizontally. The lens is fixed on a turntable front, and the front of the camera can be made perpendicular, however the base board may be tilted. Under the base board a large brass ring is attached which fits into the top of the tripod, thus saving much time in searching for the hole for the screw; and it also enables the camera to be turned round with ease, the screw being adjusted so as to hold it sufficiently tightly to prevent accidental turning. The tripod itself is ingenious, and enables the legs to be adapted to unequal ground, being at the same time quite rigid.

Mr. Gotz, 19, Buckingham Street, Strand, also supplies six double film-holders which only occupy the space of three double dark slides. The size of the whole-plate camera when folded is 10 by 10½ by 3½, and the price is £7 10s., or with three slides £10 10s., and aluminium fittings cost £2 extra.

Mr. Gotz has also shown us an aluminium camera, of which the annexed illustration conveys a good idea. It is very light, and possesses even more movements than the "Featherweight," and there are no loose parts, even the screw to attach it to the tripod being fixed to the bottom of the camera. There is a quick shutter working behind the lens, which can be used for either instantaneous or time exposures. The slides are single and very light. The tripod, it will be seen, has a ball and socket head adjusted by the screw, so that the camera can be used at any angle, and for vertical pictures, the camera is pulled right over to the side. The tripod itself is in one piece, caps fitting on the top and bottom when being carried, the bottom cap having a point making it an effective alpenstock. Both cameras can be seen at the offices of this paper.







### A NEW DARK-ROOM LAMP.

In our notice of the apparatus at the Crystal Palace Exhibition we referred to a new lamp which Mr. Slater, of Southampton Street, Camberwell, has just put upon the market. We have now the pleasure of giving an illustration of it. It has red glass on one side and orange on the other, and is made for either oil or gas, the light of both being regulated from the outside. It is so pivotted that a light touch will swing it round, and yet there is no fear of overturning it.

The ventilation of the lamp is good, and by a special arrangement the top can be lifted on leaving the dark-room so as to enable the lamp to cool down a bit. The cost of the lamp is, for oil 13s. 6d., and 2s. 6d. extra for gas; a smaller size is also supplied at 10s. 6d.

### THE "POPULAR" HAND-CAMERA.

Mr. King, of 8, Oakington Road, Elgin Avenue, Paddington, has shown us a model of this camera, which measures only about 7 by 4½ by 10 in. It is fitted with a finder the full size of the plate. It carries twelve ¼-plates in metal sheaths, and the changing is effected by pulling up a lever at the top and returning it to its original position. Fitted with a view-lens the cost is 35s., or if fitted with a rapid rectilinear 50s. The camera is also to be supplied with a small ordinary finder for 25s. Mr. King also showed us an effective portable dark-room lamp, the price of which is 4s.

## Art Colour Photographs

PERHAPS at no time like the present has the subject of photography in natural colours been more prominently before the eyes of the public. It is, however, strange that there are but few persons who can define strictly what it is they mean by the phrase. The common interpretation is that the negative when developed shall bear an image in colours identical with the original.

M. Lippmann's discoveries have already demonstrated that the primary colours can be so photographed on a transparent medium that their values are rendered with a certain accuracy when viewed by *reflected* light. That this, however, leaves much to be desired is evident both with regard to the rendering of individual tints and blends of colour and also in regard to the production of prints.

Whether or not these requirements will ever be satisfied is a matter for conjecture, but it is obvious that if a process can be discovered yielding prints in which the tints and shades of the original are reproduced without arbitrary selection, then it is evident that a vast stride towards the desired goal will have been effected.

This has at last been done by a process now being introduced by the Art Colour Photograph Company, who are exhibiting most charming and artistic colour photographs at the exhibition at the Crystal Palace. The exhibition comprises many specimens, showing the universal applicability of the process. Many excellent portrait studies are shown, notably one of Cardinal Manning taken in full canonicals. There are also copies of standard paintings, tapestries, Persian carpets, etc., in all of which the colours are most beautifully reproduced. As will be seen from our advertisement columns, so many orders have been received at the Crystal Palace that sitters have been informed of the delay that must necessarily arise before the completion of the orders.

We regret to say that we are unable at present to lay the working details before our readers, as we are informed by the Art Colour Photograph Company that their patent negotiations are not sufficiently forward to warrant their disclosing the secrets of the process.

We are, however, at liberty to mention that the principal ele-

ments of the invention consist in the preparation of the sensitised plate (the wet process being used), and also the after treatment of the print.

The first part of the invention, as above mentioned, consists in a further development of the process of ortho- or iso-chromatic photography. The second part of the invention is based upon the results of a series of experiments extending over several years latterly directed more particularly to the establishing of permanency in the prints. The inventors claim that the process will enable photographs of any description to be taken, in which all the tints, tones, and shades of the original are reproduced with absolute fidelity to nature.

With regard to cost, the Company claim that their photographs can be produced at a cost but slightly in advance of the ordinary black and white print, a fact which of itself is sufficient evidence of their further contention that no artistic skill is required in their production. Under these circumstances we may anticipate a brilliant future for these photographs, as it is fair to assume that the public will prefer an artistic photograph in colours such as the Company produces to the ordinary monochrome print.

We understand the Company intends to open studios in London, Paris, and the principal towns in France and England, and that they will be prepared to issue licenses to professionals and others for the use of the process.

We are informed by the Secretary (Mr. Arthur S. Ford) that if any amateurs who have not been able to see the photographs exhibited at the Palace will write to him at his office, Colonial House, Fenchurch Street, E.C., he will make an appointment when they can inspect some specimen prints.

## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

THE members of the Leith Amateur Photographic Association have been the first to take the field in this district. A goodly number of them took part in the excursion on Monday, 20th, to Arncliffe, and those who went had every reason to congratulate themselves on their good fortune. Besides the attractions of the locality, which are of no mean order, the day was one of the best this season. The party were taken charge of by one of the estate servants, who directed them where to go. They had a long ramble over the beautiful grounds, and in the course of the day there was "a heavy exposure." I expect the results will be heard of again; perhaps in AMATEUR PHOTOGRAPHER Competitions.

In the early part of last winter Professor Edward Muybridge, of Philadelphia, lectured to the members of the Edinburgh Association of Science and Art, giving them, by lantern, his incomparable series of views illustrating animal locomotion. In recognition of his services to science in connection with his investigations, the association recently awarded him one of their honorary medals, and the Professor has written to the Honorary Secretary a letter in which he says:—"Although I am not conscious of being deserving of this great honour from your society, I am very grateful for its generous appreciation of my efforts to teach the artist the value of a knowledge of the facts of animal movements before he seeks his impression of them from nature. Will you kindly convey to General Sir Robert Murdoch Smith and the members of your society my warmest thanks for the distinguished honour they have conferred upon me?"

**Focussing Screens.**—Mr. E. H. Fitch, of 34, Angell Road, Brixton, S.W., writes us *re* "Celluloid for Focussing Screens:" "I may say that I have been for the last year or more, and still am supplying large quantities of a special celluloid cut for this purpose, which gives great satisfaction both as regards fineness of surface, lightness, and freedom from breakage."

**The Wallasey Guardian** says:—"A delightful reproduction (by the Woodburytype process) of our townsman Mr. T. Mansell's first prize picture "Snow and Hoar Frost, a winter's morning scene in the wooded road on the western slope of Bidston Hill, forms the frontispiece to that dainty magazine the *Photographic Reporter* for April. The view was taken on December 21st, during bright sunlight, between twelve and one o'clock. Besides much technical reading there are some articles attractive to the general reader, a photographic yarn in verse detailing, with much professional humour, how the author belted the world and was rewarded with—twelve marvellous views of Australian fog."



# "Amateur Photographer" Dark-Rooms, 1891.

THE "DARK-ROOMS" kindly placed at our service for the use of amateur photographers are classed as follows:—

*a* Amateur  
*h* Hotel

*d* Dealer or professional.  
*s* Photographic society.

<i>d</i> Aberdeen*	<i>d</i> Deal*	<i>a, d</i> Leeds	<i>d h</i> Ryde, Isle of Wight
<i>d</i> Aberystwith	<i>d</i> Derby	<i>a, d</i> Leicester	<i>a</i> St. Agnes
<i>d</i> Addingham, Yorks*	<i>a</i> Devizes*	<i>d</i> Leek, Staffs	<i>d</i> St. Andrews, N.B.
<i>d</i> Andover, Hants*	<i>h</i> Dingwall, N.B.	<i>a</i> Lenzie, N.B.	<i>h</i> St. Asaph
<i>a</i> Aylesbury, Bucks	<i>a</i> Doncaster*	<i>d</i> Leytonstone, Essex	<i>d</i> St. Bees
<i>d</i> Banff, N.B.*	<i>a, d, h</i> Douglas, Isle of Man	<i>d, s</i> Liverpool	<i>a</i> St. Helens*
<i>d</i> Barmouth, N. Wales	<i>d</i> Dover	<i>h</i> Lizard, Mullion	<i>d</i> St. Heliers
<i>a</i> Barnsley*	<i>d</i> Dresden, Germany	<i>d</i> Llandudno*	<i>a</i> St. Ives, Hunts*
<i>d</i> Barnstaple	<i>d, h</i> Dublin	<i>d</i> Llandidloes*	<i>d</i> St. Leonards*
<i>d, s</i> Bath	<i>h</i> Dunblae, N.B.	<i>d</i> London, Aldersgate, E.C.	<i>h</i> St. Mellons
<i>h</i> Beaconsfield	<i>d, s</i> Dundee	<i>d</i> Borough, S.E.*	<i>h</i> St. Neots
<i>a</i> Bedford	<i>a</i> Dungarvan, co. Waterford	<i>d</i> Charterhouse Sq., E.C.	<i>d</i> Sandgate, near Folkestone
<i>d, s</i> Belfast	<i>a</i> Duns*	<i>a</i> Chelsea, S.W.	<i>d</i> Sandown, Isle of Wight
<i>d</i> Belper	<i>d</i> Durham*	<i>d</i> Fenchurch Street, E.C.*	<i>a, d</i> Scarborough
<i>d</i> Bexhill-on-Sea*	<i>d</i> East Molesey, Surrey	<i>d</i> Fleet Street, E.C.*	<i>h</i> Seddlescomb, near Battle
<i>d</i> Birchington-on-Sea*	<i>h</i> Ebbw Vale	<i>d</i> Gracechurch Street, E.C.	<i>a</i> Shaftesbury
<i>a, d, s</i> Birmingham	<i>d</i> Edinburgh	<i>d</i> London Bridge, S.E.*	<i>d</i> Shanklin, Isle of Wight
<i>d</i> Blackburn, Lanc.*	<i>s</i> Egremont*	<i>d</i> New Cross, S.E.*	<i>d, s</i> Sheffield
<i>h</i> Blakeney, nr. Severn Bridge	<i>h</i> Ennistymon, co. Clare	<i>d</i> Peckham, S.E.	<i>h</i> Shepton Mallet
<i>h</i> Bodiam	<i>a</i> Enfield Town*	<i>d</i> Walworth Road, S.E.*	<i>d</i> Shrewsbury
<i>d</i> Bodmin	<i>d</i> Eton	<i>h</i> Long Eaton	<i>h</i> Sleaford
<i>d</i> Bolton*	<i>a, d</i> Evesham	<i>h</i> Long Melford	<i>d, h</i> Southampton
<i>h</i> Bonar Bridge	<i>d</i> Exeter	<i>d</i> Loughborough*	<i>h</i> Southend-on-Sea
<i>h</i> Boro' Bridge, Yorks	<i>s</i> Falkirk*	<i>a, d</i> Louth	<i>a</i> Southport
<i>d</i> Bournemouth	<i>d</i> Falmouth*	<i>d, h</i> Ludlow	<i>a, s</i> Southsea
<i>d</i> Bournemouth, West	<i>d</i> Faversham	<i>d</i> Lynmouth*	<i>a</i> Stamford
<i>d</i> Bradford	<i>d</i> Felixstowe*	<i>d</i> Lynn*	<i>a</i> Steyning
<i>d</i> Bramley, near Leeds	<i>d</i> Finchley	<i>a</i> Lythe, Whitby	<i>d</i> Stockton-on-Tees
<i>d, h</i> Brechin, N.B.*	<i>h</i> Fochabers, N.B.	<i>h</i> Macroom, N.B., co. Cork	<i>d</i> Stoke-on-Trent
<i>h</i> Bridge, near Canterbury	<i>d</i> Folkestone	<i>a</i> Madeley, Salop	<i>a</i> Stony Stratford*
<i>d</i> Bridlington Quay	<i>a</i> Four Ashes, nr. Stourbridge*	<i>d</i> Maidenhead	<i>a, d</i> Stourbridge
<i>d</i> Brigg, Yorks	<i>a</i> Frodsham	<i>d</i> Mainz, Germany*	<i>d, h</i> Stratford-on-Avon
<i>d</i> Brighton, Hove	<i>a</i> Galashiels, N.B.	<i>d</i> Manchester*	<i>d</i> Stroud
<i>d, h</i> Brighton	<i>h</i> Giant's Causeway, Ireland	<i>h</i> Mallow, co. Cork	<i>h</i> Sudbury, Suffolk
<i>d</i> Bristol	<i>d, s</i> Glasgow	<i>d</i> Malta*	<i>h</i> Sunderland
<i>h</i> Broadway, Worcester	<i>h</i> Glenalmond, N.B. (nr. Perth)	<i>d</i> Malvern*	<i>h</i> Sutton Bridge
<i>d</i> Bromley, Kent	<i>h</i> Glenarm, Belfast	<i>d</i> Mansfield*	<i>h</i> Sutton
<i>h</i> Brough, Westmoreland	<i>d</i> Gloucester	<i>d</i> Margate	<i>d</i> Swindon
<i>s</i> Burnley*	<i>d</i> Gorleston	<i>h</i> Merthyr Tydfil	<i>d</i> Taunton
<i>d</i> Burslem	<i>a</i> Goring-on-Thames	<i>d</i> Merton	<i>d</i> Tavistock*
<i>a</i> Cadiz, Spain*	<i>a</i> Gravesend	<i>d</i> Middlesbrough	<i>a</i> Thornton Dale, nr. Pickering
<i>h</i> Callander, N.B.	<i>d</i> Great Yarmouth*	<i>h</i> Monmouth	<i>h</i> Thorpe
<i>h</i> Camborne	<i>a</i> Halifax*	<i>d</i> Montrose, N.B.	<i>h</i> Tintern Abbey
<i>d, h</i> Cambridge	<i>d</i> Handsworth*	<i>a</i> Mountsorrel	<i>d</i> Todmorden
<i>d</i> Carnarvon*	<i>d</i> Hanley*	<i>a</i> Mumbles, near Swansea	<i>d</i> Torquay
<i>h</i> Capel-Curig, N. Wales	<i>d</i> Harrogate	<i>d</i> Newark, Notts	<i>h</i> Tring
<i>a</i> Chalfont St. Peter, Mid.	<i>d, h</i> Hastings	<i>d</i> Newcastle-on-Tyne	<i>d</i> Tunbridge Wells
<i>d</i> Cheltenham	<i>s</i> Havant*	<i>d</i> Newport, Mon.	<i>a</i> Tynemouth*
<i>d</i> Chepstow	<i>d</i> Hereford	<i>a</i> Newport, Pembroke	<i>s</i> Uttoxeter
<i>d</i> Chester	<i>d</i> Hexham	<i>a</i> Niton, Isle of Wight	<i>a</i> Ventnor*
<i>a</i> Chesterfield	<i>h</i> Holbeach	<i>d</i> Norwich	<i>a</i> Vienna*
<i>a</i> Chipping Sodbury*	<i>a, d</i> Hull	<i>d</i> Nottingham	<i>h</i> Wadebridge
<i>a</i> Cinderford	<i>d, h</i> Ilfracombe	<i>a</i> Northallerton*	<i>d</i> Wakefield
<i>d, h</i> Cirencester	<i>d, s</i> Ipswich	<i>s</i> Oldham	<i>h</i> Warwick
<i>d</i> Clacton-on-Sea	<i>d</i> Jarrow	<i>a, d</i> Oxford	<i>a, d</i> Waterford
<i>s</i> Cleckheaton	<i>d</i> Jersey	<i>h</i> Paignton*	<i>d</i> Wath-on-Dearne
<i>d</i> Clevedon*	<i>d, s</i> Keighley	<i>h</i> Paisley, N.B.	<i>a</i> Wellington, Salop
<i>d</i> Clifton	<i>s</i> Kendal	<i>d</i> Penrith	<i>d, s</i> West Hartlepool
<i>a</i> Clitheroe	<i>a</i> Kingstown, Dublin*	<i>d</i> Penzance	<i>d</i> Weston-super-Mare
<i>d</i> Colchester	<i>a</i> Knutsford	<i>d</i> Pershore	<i>h</i> Wetwang, York
<i>h</i> Colnbrook	<i>d, h</i> Lancaster	<i>a</i> Perth*	<i>d</i> Weymouth
<i>d</i> Colwyn Bay*	<i>d</i> Larne*	<i>a</i> Poole*	<i>d</i> Whitby
<i>h</i> Congleton	<i>d</i> Leamington	<i>h</i> Port Erin, Isle of Man	<i>d</i> Wimbledon
<i>a</i> Coniston	<i>d</i> Lechlade	<i>d</i> Preston	<i>d</i> Winchester
<i>d, s</i> Crewe*	<i>h</i> Ledbury	<i>h</i> Prince's Risboro'	<i>h</i> Wrexham
<i>d</i> Crewkerne*		<i>d</i> Ramsgate	<i>d, h</i> Windsor and Eton
<i>d</i> Croydon*		<i>d</i> Reading	<i>d</i> Wisbech
<i>a</i> Dalton-in-Furness		<i>h</i> Redcar	<i>a</i> Wolverhampton*
<i>d</i> Darlington		<i>h</i> Redditch	<i>a</i> Worcester
<i>h</i> Dartmouth		<i>d</i> Rhayader	<i>d, h</i> Worthing
		<i>d</i> Richmond, Surrey	
		<i>a</i> Ringwood, Hants	
		<i>d</i> Rochdale	<i>a</i> Yarm
		<i>a</i> Rodley, near Leeds	<i>d</i> Yeovil*
		<i>d</i> Romford	<i>a, d</i> York
		<i>d</i> Royston	<i>d</i> Youghal

NOTE.—At the time of going to press we have not received signed authority for the use of "Dark-rooms" marked\*; but they were all placed at our disposal last year, and are doubtless available. — Ed. AM. PHOT



APPLICATIONS for letters of introduction must be accompanied by **three penny stamps**. Full particulars are given as to charges (if any); plates, chemicals, etc., kept in stock by dealers; terms for temporary membership of societies, etc., etc.

THE OWNER of Dark-Room will be advised by same post as the applicant. In order to prevent delay, all applications should be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., and *plainly* endorsed "Dark-Rooms."

CONTINENTAL DARK-ROOMS.—Information can be supplied respecting many Dark-Rooms on the Continent, and addresses given of firms who stock photographic materials.

#### LABELS FOR BOXES OF UNEXPOSED PLATES.

The following list in different languages may prove of service to the tourist; it has been kindly supplied to us by Mr. W. E. Woodbury:—

*English*.—Sensitive photographic plates, which will be quite spoilt if opened in the light. Only to be opened in a totally dark room or by a red light.

*French*.—Plaques photographiques sensibles. Tout détruites par l'exposition à la lumière. Prendre garde de n'ouvrir la boîte que dans une chambre parfaitement obscure.

*German*.—Photographische Tackelplatten Sehr lichtempfindlich Werden ganz verdorben, wenn dem Lichte ausgesetzt Müssen nur in absolut dunkelm Zimmer oder bei rothem Lichte geöffnet werden.

*Spanish*.—Las placas fotograficas sensitivas, que se inutilizan si se las expone al abrirlas, à la luz del dia, se pueden abrir sin inconvenientes en una habitacion enteramente oscura o iluminada por luz roja.

*Portuguese*.—Laminas fotograficas sensitivas. Nao podem ser expostas à luz porque se inutilizam; podendo só ser abertas em camara, escura oce com luz vermelho.

*Dutch*.—Chemisch toebereide photographische platen weke gehue bedorven worden als zy aan de lucus worden blaagteschild. Alleen te openen in eene donkere kamer of by rood licht.

*Italian*.—Piastra fotografiche sensitive che si imperanno affatto si esposte alla luce del giorno. Da aprirsi solo in una stanza affatto buia o dove regni una luce rossa.

*Norwegian*.—Følsomme fotografiske Plader, som fuldstandig fordærvet ved at udsættes for Lysel. Bo'r knn aabnes i et aldeles mørkt Rum eller ved rødt Lys.

*Swedish*.—Sjuskasliga fotografiska plåtar, blifva förstörda om de utsättas för ljus. Fås därför ej öppnas utom i ett absolut mörkt rum.

*Greek*.—Ὅτι ἐν ἀνοδῶν φωτογραφικὰ πλάταις αἰζητὴν δα φθορὰν ἂν ἀνοιχθῶσιν ἐν αὐτῇ φωτὶ. Δέον νὰ ἀνοιχθῶσιν ἐν στυπεννύδωματιαν, ἢ μεφὰς ἐρυθροῦν.

## Notes for Novices.

### PREPARING FOR OUTDOOR WORK.

BEFORE starting out it is always advisable to look over your apparatus and see that everything is ready for use and that you have everything. A very good plan is to set your apparatus and go through all the necessary operations of focussing, and then unlimber your apparatus and as you do so pack it in your case. Be careful that you do not leave your stops, screws, or tripod top behind, nor your focussing cloth. Another very useful adjunct which may or may not come in handy is a ball of good stout string; this may be used on a windy day to tie the focussing cloth down, unless you happen to possess one of Manson's new cloths (see AMATEUR PHOTOGRAPHER, p. 277), which are a perfect boon to a photographer in a high wind. Then again a piece of string tied to the tripod top and ending in a loop reaching within an inch of the ground, placing your foot in this and stretching tight on to the ground, will hold the camera firmer still.

#### VIEW FINDERS.

To the artistic worker, a view finder is almost a necessity. There are various kinds in the market, but the simplest and least expensive is the camera itself. All that is necessary is to unscrew the lens from the flange, place the eye at this aperture, remove the focussing screen and you can then shift your camera about till you see just the bit you want. Then the camera may be swung right round and the lens screwed in and the view examined on the ground-glass. The rules of composition, etc., have been so well laid down in the works of Mr. Robinson, and in the valuable articles now appearing in the pages of the AMATEUR PHOTOGRAPHER, that we shall not attempt any hint in this direction, only remarking that colour should be disregarded and the massing of light and shade only looked to.

### EXPOSURE NOTE BOOKS.

Always keep a record of your exposures, and make sufficient notes to be able to call to mind the actual scene, so that you may determine exactly what to do in developing, whether to increase or decrease contrast, as, notwithstanding Messrs. Hurter and Driffield's generalisations, an enormous power is in the hands of the operator when using pyro or hydroquinone or eikonogen, though there is less power with the two latter reducing agents, and practically none with ferrous oxalate.

### EXPOSURE METERS, ETC.

The question as to whether any table, calculation, or exposure meter is of any value, is always a much disputed point. There are some workers who sneer at such helps, and sneer at those who use them, and this is done because they actually, though not openly perhaps, consider it derogatory to their dignity to condescend to use such aids. This is dignity on a broomstick with a vengeance. They never for one moment think that in mentally referring back to past experiences they use an exposure table. It is utterly absurd to suppose for one moment that a novice can know what exposure to give to a certain subject or any number of subjects in one day; he does not know how to gauge the value of the light, the effect of local and general colour, etc., etc., and therefore surely he may well be pardoned if he makes use of the experience of others, or their tables, to aid him in this respect; and, provided such tables, etc., are used intelligently they are of valuable assistance to the novice and must save a lot of "wasters." Never adhere too slavishly to any table, always mentally refer to past experience, and see whether you cannot recall a somewhat similar subject, and the results you obtained.

Never be in too much of a hurry to expose your plates; it is far better to go home with half your plates exposed than to expose on anything and everything, that is, if you want artistic results. If you merely want to gain experience in developing, etc., then by all means expose all and every plate you have; but unless one's purse and time are both illimitable one soon gets tired of this sort of work.

## Round and About the Clubs.

THE members of the Brixton and Clapham Camera Club held their second competition and exhibition of members' work on Friday and Saturday, the 17th and 18th April, on which occasion between two and three hundred prints were sent in, and the general character of the work was good. On the second evening there was a lantern show and concert, and altogether the affair was a great success. It was made a stipulation that exhibits were to be entirely the work of the exhibitor, and that the pictures winning prizes should become the property of the club. The latter is not a bad idea; it will enable the club to secure a picture gallery which will contain all the best pictures shown at its exhibitions, which will themselves act as landmarks in the progress of photography.

There were five classes: landscape, architecture, instantaneous, portraiture and figure studies, and enlargements; and the judges were Messrs. J. Traill Taylor and A. R. Dresser.

The silver medal for the best picture in the exhibition was worthily secured by Mr. J. A. Butler, by a bromide enlargement, "In Amsterdam," giving a fine view of one of the canals. In landscape, Mr. F. Goldby took the bronze medal with an Obernetter print, "The Grindenwald Glacier," a fine picture, in which the gradation was excellent, running the silver medal picture very closely on all points. Certificates in the same class were also awarded to Mr. F. W. Kent, for a bromide print, "Is She in Sight?" a man standing on the rocks on the seashore looking out for a vessel; and Mr. F. W. Levett for an aristotype print, "A Brief Rest." The bronze medal for architecture went to Mr. F. W. Kent, for a bromide print of "The Norman Tower, Christchurch," which was good, though apparently a little out in the mounting. Mr. F. W. Levett secured the certificate for an aristotype interior, "Ruislip Church," which was an admirable piece of work, all the more creditable because we believe it was his first attempt in that line. In the instantaneous class Mr. W. H. Powell carries off the bronze medal with a print on plain salted paper, "Overbacks," showing a phase of the jump in the game generally known as "leap-frog;" it is very sharp. Mr. J.



W. Coade secures the certificate by a fine view of "Ramsgate Sands," certainly as good a one as we have ever seen. In portraiture and figure study the work was not so good as in other classes, perhaps from lack of opportunity to study and practice that branch of the art. The bronze medal went to Mr. W. Bevins for "The Coastguard," a silver print; the posing was excellent. Certificates were awarded to Mr. E. J. Everett for an albumen print, "A Group of Sailors," and to Mr. A. B. Wilkinson for a similar print, "At Work." In enlargements we have already mentioned the winner of the first prize. The certificate was awarded to Mr. F. W. Kent for "A Stormy Day," which made a fine picture. Amongst the pictures which did not secure awards but are worthy of notice, there were a fine enlargement by Mr. F. W. Levett, showing two horses and mowing machine; a set of four views, "After the Storm," "A Rough Day," "The Quay," and "The Shallows," the latter having splendid clouds, by Mr. F. W. Kent; a bromide print of "Torquay," by Mr. J. W. Coade; a very pretty river scene, "Near Isleworth," by Mr. W. Bevins; and three interiors by Dr. Reynolds, one of which was particularly good.

There was a class for lantern-slides, the judges being Messrs. A. Pringle, H. Starnes, and A. R. Dresser. The silver medal given by the President (Mr. A. R. Dresser), for the best set of six slides, was awarded to Mr. F. Goldby, and the certificate to Mr. J. A. Butler.

## Thursday Evenings at the Camera Club.

(BY ONE OF OUR STAFF.)

On Thursday, April 23rd, Mr. Frank Howard read a paper entitled "Amongst Bye-paths and Field-lanes with the Camera." Sir George Prescott occupied the chair.

Previous to the lecture Dr. Patterson showed some binding strips for lantern slides which he said would stick. They were produced by Schweitzer, of New York.

Mr. Howard in his paper dwelt on the charm of wandering amongst the beauties of the country and studying with and without the camera the picturesqueness of rustic people and rural scenes. He gave a few hints as to the most probable way of dropping upon the out-of-the-world picturesqueness which was so fast disappearing. The lecture was illustrated a number of slides.

After a vote of thanks to Mr. Howard had been passed by acclamation, slides were shown by Messrs. Austin, Bright, Gale, Hussey, Patterson, and Seyd.

On Thursday, May 7th, Mr. Willis will give a paper entitled "Clam-Chowder."

## Exhibitions.

### CRYSTAL PALACE EXHIBITION.

THE work shown in the art division, as was to be expected, was of varied value, but some of it was as good as could be desired. Care and thought have been displayed in the great majority of the exhibits, and considerable taste shown in both the mounting and framing of the pictures. As there were over eleven hundred catalogued exhibits, it is evident that we cannot deal with them all, and in the few notes we propose to give we shall, therefore, confine ourselves to those which secured awards at the hands of the judges:—Messrs. Frank Atkinson, Valentine Blanchard, F. P. Cembrano, F. Mason Good, Frank Howard, and Philip H. Newman.

Dealing with the Professional class first, we find that the

#### GOLD MEDAL

for the best alcove was awarded to Van der Weyde, of Regent Street; the alcove contained eleven pictures, all of which, with the exception of a frame of panel platinotypes, were enlargements. Two of these—"The Death of Cleopatra" and "Mark Antony"—were life-size, and "Mrs. Langtry, as Cleopatra" reclining on a couch, was but little smaller. The pictures, however, which showed the most delicate work were those of Minnie Terry, Miss Edith Chester, and a coloured photograph of Lady Mary Hatzfeldt.

### THE SILVER MEDAL

for the best screen went to Mr. W. Winter, of Derby, who showed some splendid work, two sepia platinotypes, "An Authoress" and "Ice Queen," being particularly striking, and the portraits of Mrs. Clarkson and the Misses Hewson were of almost equal merit.

#### BRONZE MEDALS.

*Pure Landscape.*—R. Keene, Derby, for a frame of platinotypes of "Derbyshire Dales" (689), showing artistic selection and careful treatment.

*Landscape with Figure.*—R. H. Lord, Cambridge (990), "An Idle Moment," a useful study telling its own tale. It shows two horses standing at the plough, the driver leaning on the handles and talking to a girl who has been gathering firewood.

*Architecture.*—F. W. Edwards, 87, Bellenden Road, Peckham, (578), a fine direct picture of the "Houses of Parliament," in a warm tone, which is very effective. C. Whiting, 44, Denmark Road, Ealing Dean (740), a view of the "Crypt of Canterbury Cathedral," which recently took a prize at the West London Photographic Society Exhibition. Lala Deen Layal, Indore, Central India (992), a fine series of pictures of the "Dilwara Temples, Mount Abu."

*Clouds.*—A. Swan Watson, Edinburgh (1,000 and 1,002), two splendid frames, one containing six gelatino-chloride photographs and the other six platinum prints of "Sunset Studies;" they are as fine cloud studies as we have seen in any competition.

*Flashlight Pictures.*—John Collier, Birmingham (1,100), a good series of full-length portraits.

*Genre Subjects.*—W. M. Malby, Chichester (1,107), a frame as full as possible of prints, which overlapped each other, and generally conveyed the idea of much crowding, spoiling the effect of otherwise good work, four large heads being specially good.

*Photo-mechanical Pictures.*—W. L. Colls, Barnes (1,106), six photo-etchings, done in Mr. Colls's best style, about which we need say nothing.

*Dry Point Series.*—H. Flather, Queen's Road, S.E. (970 and series), a number of prints showing the various stages in the process of "dry point" or "needle" finishing, a most effective process for portraits, as shown in the examples hung.

*Reproductions.*—S. B. Bolas and Co., Ludgate Hill (951 and series), a number of phototype reproductions in various colours, the most striking, perhaps, being a reproduction, in blue tint, of Turner's "Rain, Wind, and Storm."

*Portraiture.*—The work of W. Crooke, Princess Street, Edinburgh, was considered by the judges to be good that a special gold medal was awarded to him (102 and series); amongst the more striking of the portraits were those of M. Paderewski, Colonel Leslie, the Lord Advocate, and a number of the Lords Justices of Scotland.

*The Challenge Cup.*—The exhibit of the Birmingham Photographic Society again secured the cup by a magnificent show of work, although the exhibit of the West London Society was but little inferior. It is a curious fact that there is only one individual prize taken in the Birmingham Society, while there are three in the West London Society. Of course, we do not mean to say that the number of prize-takers in the society should weigh with the judges, but the coincidence gives rise to many reflections, as to individual and average ability, and other questions of a like nature.

Coming now to the Amateurs, we find that

#### THE SILVER MEDAL,

for ladies, was awarded to Miss Lil Tomkinson, Liverpool, whose name, unfortunately, is not in the catalogue. The pictures were "The Little Old Woman who had so many Children she didn't know what to do," is a picture of a little girl surrounded by dozens of dolls; the child's face wears a perplexed look, and one can easily imagine she did not know what to do with her dollies; four pretty platinotypes—"Stepping-stones," "In the Dale, Bromborough," "Banqueting Hall, Haddon Hall," and "Roby Mere."

#### BRONZE MEDALS.

*Pure Landscape.*—J. A. Hodges, Chancery Lane (732), "Near Brendon," a charming warm platinum print, in which the gradations are excellent, and the general effect of the picture was most artistic. B. Karleese, Birmingham (532 and series),



fifteen views of Warwickshire scenery, and on the whole making pretty pictures and showing careful work.

*Landscape with Figure.*—The Rev. Precentor Mann, Bristol (410 and series), a series of beautiful prints of Old Normandy, interesting in themselves, historically, and also for the admirable workmanship. J. E. Austin, West Court, Detling, Maidstone (442 and series), some of Mr. Austin's Whitby studies, which we have so often commented upon that we need not again point out the excellencies of the work.

*Architecture.*—C. Court Cole, Oxford (1,139 and series), three fine pictures excellently selected—All Soul's College Chapel; Library, Queen's College; and Divinity Chapel, all at Oxford.

INSTANTANEOUS, INCLUDING MARINE SUBJECTS.

A. R. Dresser, Bexley Heath, Kent (1,071 and series), four bromide enlargements of Mr. Dresser's well-known Jersey sea pictures, giving evidence of careful work.

*Animals and Birds.*—Karl Greger, 17, Gordon Street, Islington (852), six sepia platinotype pictures of farm life, of excellent composition and careful printing, making a charming set—"In the Highlands," "Home from the Pastures," "Waiting at the Farmstead," "Evening," "Close of the Day," and "Surrey Meadow."

*Home Portraiture.*—J. H. Pickard, Birmingham (497), "A Bunch of Grapes," a fine bromide enlargement, showing careful printing and development with very fine gradations, the relative values being good.

#### FOR ENTIRE EXHIBIT.

H. Selby, 42, Ladbroke Grove Road, W., a series of half-plate platinotypes, containing several very charming pictures in delicate tones, and representing a wide range of subjects—"Twilight," "A Rock-bound Coast," "A Relic of the Past," "The Shades of Night," "The Dawn of Day," "The Distant Sea," "A Grey Morning," and "The Silent Highway." "The Distant Sea" made a striking picture, showing a view to the sea across a cornfield.

#### SCIENTIFIC PHOTOGRAPHS.

*Bronze Medal.*—A. F. Stanley, Kent, Physiological Laboratory, Oxford (478), eight photo-micrographs.

#### TRANSPARENCIES.

*Bronze Medal* (Professional).—F. W. Edwards, Peckham (1,165, 1,166).

Alcove 4 R was a very interesting one, as it contained a large number of pictures taken by the late Mrs. Julia Cameron, including portraits of Professor Jowett, Carlyle, Sir John Herschell, and Dr. Joachim, Tennyson, Browning, Darwin, and Sir Coutts Lindsay. Messrs. Cameron and Smith, of Mortimer Street, W., showed some fine etchings and portraits, including one on porcelain of Mary Anderson.

In Alcove 9 R, Mr. Alexander Ayton, Edinburgh, has a striking carbon enlargement on opal, "Sweet Sixteen," and a fine group, "Cousins," containing eleven children.

In Alcove 1 L, Messrs. Poulton and Son, Lee, show some excellent views of Whitby, Mentone, Monte Carlo, Cannes, and Algiers, those of Monte Carlo including views of the interior of the *salle de jeu*, and the theatre, which, we understand, have never before been photographed.

Mr. Wollaston has been single-handed this year in making the arrangements for the show, and we must congratulate him upon his success and upon the general success of the Exhibition, notwithstanding the fact that the larger apparatus manufacturers held aloof. We would like, however, to make one suggestion to him of the next occasion. It would be for the general convenience, not only of photographers, but of the public, if after the letters indicating the various classes the subject itself were placed, for after all class A P or A C is, to say the least of it, rather vague. Beyond this, however, we do not know that there is anything we can suggest in the way of alteration for the next Exhibition, which it is to be hoped will not be boycotted by anyone.

#### GLOUCESTER PHOTOGRAPHIC EXHIBITION.

The Triennial Exhibition of the Gloucester Photographic Society was opened in the Assembly Rooms, Gloucester, on April 20th and closed on the 30th. The room is well adapted for the purpose of an exhibition, as it is entirely lighted from the top, thus giving plenty of light and wall space.

On a first glance it looked very like a smaller edition of

Liverpool (we believe no less than forty of the Liverpool exhibitors showed here).

The principal exhibit (not for competition) was undoubtedly the celebrated series of "Artists at Home," by Ralph W. Robinson, and also the "Animal Studies" of Hedges and Sons, Lytham. Mr. H. P. Robinson also showed some of his well-known studies.

To particularise: In Class I.—Portraits, Professional—the medals were allotted to W. J. Byrne and W. W. Winter, the portrait of Miss Terry, by Window and Groves, running the winners very close.

Class 2, Portraits, Amateur. Winners: Shapoor N. Bhedwar and W. J. Jenkins, the latter a local man; Shapoor N. Bhedwar's portraits of Mrs. Fitzgerald and Miss Barrington being very fine. This class also included "Harmony," by J. E. Austin, and "My Sister," by W. Smedley.

Class 3—Landscape, Professional—was an excellent one. We especially noticed "A Misty Morning," by A. Hendrey; "The Road to the Mill," by J. P. Gibson; "Dinner Time," by A. Durn; and "Sunset on the Don," by F. Whaley. In the latter, however, the sun was badly stopped out.

Class 4, Landscape, Amateur, under 8½ by 6½. Medals: Karl Greger, Martin J. Harding. An "Old Welsh Bridge, Winter," by A. W. Gottlieb, was a lovely little study.

Class 5—Landscape, Amateur, 8½ by 6½ and above—was a strong one. Medals: J. E. Austin, E. Lloyd Edwards, and W. H. Banks. Austin's "By the Tow-path" and "The Road by the Sea" were easily first. "A Cumberland Lane," by A. Huddart; "Sunset at the Old Mill," by J. Gale; "On Babbacombe Beach," by W. C. Beetham; "Watcombe Bay," by T. M. Brownrigg, were all noticeable. "A Wild March Morning," by E. Lloyd Edwards, well deserved the extra medal allotted to it.

Class 6, Instantaneous. Here the prominent features were the studies of "The Smoky Tyne," by Lyddell Sawyer. "A Study of Pigeons," by Charles Reid, was remarkably good. In our opinion "Clovelly Harbour," by W. C. Beetham, deserved some recognition by the judges.

Class 7, Hand-camera Work, contained no new feature of interest.

Class 8, Architecture under 8½ by 6½. The winners were E. Beck and C. Court Cole.

Class 9, Architecture, 8½ by 6½ and above. This class contained R. Keene's well-known Derbyshire interiors, but which did not receive a reward. "Prior Rowland Lechmann's Shrine," by J. P. Gibson, "Lilleshall Abbey," by J. Gale, were good. The marble pillars in "Midland Hotel, Bradford," T. Scottow, were admirably rendered.

Class 10, Genre or Figure. A good class. 1st, Lyddell Sawyer, extra silver medal, Shapoor N. Bhedwar; bronze medal, R. H. Lord. We noticed "What does it Weigh?" T. Glazebrook, "An Idle Moment," and "Work and Play," R. H. Lord.

Class 11, Enlargements (Amateur).—Here F. W. Worsley Benison was easily first, Messrs. Kitchen and Huson taking the other awards. "Winter," by J. E. Austin, was very good.

The lantern slides we did not see.

Class 15, Scientific. This was the only class in which we were unable to agree with the judges, the award going to "Views from a Balloon," by Cecil V. Shadbolt; in our opinion it should have gone to A. W. Gottlieb, for "A Bunch of Grapes," which was by far the greatest novelty in the Exhibition, the technical work being perfect, on Alpha paper, toned to the richest purple, and showing the bloom on every grape.

Class 16, Collection of photographs by members of the Society, contained good work by Messrs. Beetham, Hodges, Pitcher, etc.

We are afraid that the general public have scarcely patronised the Exhibition to the extent it deserved. We ought also to mention that a lantern exhibition was held each evening, the first one being given by Mr. Paul Lange, of Liverpool, with his Iceland views.

We heard casually that the Gloucester Society were thinking of taking up the survey of their ancient city. We sincerely hope that this is true, as they have a field in which to work that is second to none in the country.

Concerning the claim that the first photograph of a flash of lightning was made by an Englishman named Jarman, in 1877, a correspondent of the *Photo. Archiv* points out that the same thing was done some fifteen years before, and quotes from Heinlein's "Photographicon" (Leipzig, 1864), p. 380.



## Quarterly Examinations in Photography.

**Question 7.**—What is the meaning of the terms *isochromatic* and *orthochromatic*, and which is correct? State the theory involved in *orthochromatic* photography.

**ANSWER.**—Neither *isochromatic* nor *orthochromatic* is a correct expression. One means "equally coloured," the other "rightly coloured." To be correct, it should be some word meaning "rightly translated," i.e., the colours in nature are "rightly translated" into monochrome. I should say *orthochromatic* was the least incorrect of the two.

The theory of *orthochromatic* photography is that the intensities of colour, acting chemically on a sensitive film, should be made the same as when they act visually on the retina of our eyes. The difference of these intensities is well shown in a table in last week's *AMATEUR PHOTOGRAPHER*. This can now be accomplished by a combination of two methods. Soaking the plate in such chemicals as cyanin when sensitiveness to red, or erythrosine when sensitiveness to yellow and green is needed, will considerably increase the chemical energy of these colours on the sensitive surface. Whether these agents act physically or chemically is as yet a moot point, Eder supposing that the vibrations are absorbed by the coloured compounds, and do the work of photographic decomposition, Abney holding that the colouring agent undergoes photographic chemical decomposition in the region of absorption, and that agents are created which act on the silver haloid.

However they act, these dyes only do half the work, i.e., they increase the sensitiveness of the plate to the less active (chemically) rays of the spectrum, but they do not diminish the activity of the blue and violet rays, and this latter part of the work is done with coloured screens.

R. C. M.

**Question 8**—What is the action of a mixture of *bichromate* of potash, *hydrochloric acid*, and *water* on a *dry-plate* before exposure, after exposure, and after development and fixing.

**ANSWER.**—Before Exposure. Being unable to find anything in the different text-books, I carried out a series of experiments, with the result that I could not find any difference, except that the plates were much slower and gave strong contrasts suitable for mechanical work.

After Exposure. The latent image is destroyed and the plate is resensitised, but is very slow, as mentioned above.

After Development and Fixing. The image on the plate being now metallic silver, is attacked by the mixture and bleached, i.e., is converted into chloride of silver, but can be printed out or developed after a short exposure and toned. This process is sometimes adopted for toning lantern slides and prints produced from a bromide emulsion.

S. N.

**Question 9.**—Define the terms *stop*, *diaphragm*,  $f/8$ , *U. S. No. 2*; and give Dallmeyer's system of numbering the aperture of diaphragms.

**ANSWER.**—*Stop*. A disc (usually of metal) with a central aperture of such a size as to allow the rays of light to pass only through that portion of the lens that it has been determined to use. A stop must therefore be placed close to the lens.

*Diaphragm*. Is similar to a stop, but is placed some distance from the lens, and its object is not to reduce the size of the lens, but to transmit only those rays that are parallel to the axis of the lens. The diaphragm is usually placed in a single lens about one-fourth to one-seventh of the focal length off, and in a doublet at the optical centre.

$f/8$ . This is the usual way of numbering diaphragms, and means a diaphragm with an aperture the diameter of which is one-eighth of the focal length. Note, the area of circle varies as the square of the diameter, hence in making comparisons it is necessary to square the  $f$  number.

*U. S. No. 2*. This means a diaphragm the area of which is twice that fixed by the P. S. of G. B.  $f/4$  as the uniform standard, that is twice  $4^2 = 32$ , taking the square root of which gives us  $f/5.656$ .

Dallmeyer's system is similar to the U. S., only he takes as a standard  $f/\sqrt{10}$ , i.e., about  $f/3.1623$ , and the advantage claimed is that it enables a decimal system to be used. His stops are numbered from 5 to 500.

S. N.



**Naming Photographs.**—Mr. A. Gray, of 44, Snow Hill, London, E.C., has just brought out a patent apparatus or machine for printing in white letters the title upon a photographic print. This little invention is issued with the title "Name It," and will be found of considerable service to both the amateur and professional. Prices and fuller particulars can be had of the inventor.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the *PHOTOGRAPHIC REPORTER*, and the Editor of the *REPORTER* will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Ashton.**—The first meeting of this society in its new home at Henry Square took place on Thursday evening. The object of the gathering was for the purpose of giving to beginners an idea of the different methods adopted in the development of plates in photography. The following is a list of names of the gentlemen who were developing and the various chemicals which they were using:—Mr. Glazebrook with hydroquinone, Mr. Redfern with eikonogen, Mr. Greenwood with eiko-cum-hydro, Mr. W. Chadwick with ferrous-oxalate, Mr. J. W. Kenworthy with pyro and ammonia. The Chairman announced that the rooms would be open daily, and that a dark-room was about to be fitted up for the convenience of the members. Every Thursday night, he added, would be set apart as a club night for different members to compare notes.

**Birmingham (New Club).**—At a meeting held at the Colonnade Hotel, New Street, on the 22nd ult., it was resolved that a photographic club or society be formed, and a Provisional Committee consisting of Dr. Leech (Chairman), Dr. Hall Edwards, E. Morton, C. R. Lunn, Dr. Maberley, and Walter D. Welford (Hon. Secretary), was appointed to draft out a code of rules and make the necessary general arrangements, to be placed before a general meeting for adoption, to be called at an early date. The idea of the Provisional Committee is that the name should be "The Midland Camera Club." It is proposed that the work of the club be divided into the following sections: Scientific, Archaeological, Lantern, Cycling and Touring, Ladies', and Instruction of Beginners. Each section to hold their own meetings, and appoint their own officials. General meetings will be held monthly, probably on Tuesday or Friday nights. The Committee think that much detail work could be done by the sections, leaving the general meetings free for lectures, lantern exhibitions, etc., and in this respect the new club will go outside its ranks to other societies, and thus promote friendly intercourse. Club-rooms have already been secured in a central part of the town—one a fair size for meetings, with two smaller ones attached for dark-rooms. For lectures and exhibitions a large hall, holding 200 to 300, will also be at their service. About thirty gentlemen have signified their desire to join.

**Birmingham.**—At the ordinary meeting on the 23rd ult., Mr. G. T. Lyndon in the chair, there were fifty-eight members present. The Chairman congratulated the Society on again winning the national silver challenge cup, and then called upon Mr. W. J. Harrison, F.G.S., for his paper and demonstration on "Instantaneous Photography." Mr. Harrison announced that Dr. Norris's new dry collodion plate would be on the market about midsummer. A new factory was being built for its manufacture at Stechford. He explained the working of Decoudun's exposure meter and Messrs. Hurter and Driffeld's, which he had used with success for twelve months. Watkin's exposure meter was also shown. Warnerke's sensitometer was exhibited and explained, with examples which had been tested. In working he preferred to take Place's and Underwood's shutters for use instead of using a cap for lens. He advised members to use boiled distilled water when making up their developing solutions, and not to hurry development. If a plate is over-exposed it should be first soaked in a weak bath of potassium bromide, and if under-exposed a soaking in very dilute ammonia is beneficial. Latitude of plates, he said, was often over-rated, and there is generally greater latitude for over-exposure than for under. After some further remarks Mr. Harrison developed half a dozen plates he had exposed with a hand-camera that day in the streets of Birmingham, the whole of them coming up wonderfully well, the developers used being Thomas's hydroquinone, pyro, and ferrous oxalate, as put up in their travelling cases. He then took several flash-light pictures of the company present.

**Bristol.**—The April meeting of the amateur photographic association was held on the 10th ult. The question of sending in contributions for the circulating portfolio, mounted or unmounted, was raised by Mr. Hutchinson, who said that members seemed to be in doubt. It was suggested that in view of the different destinies of particular prints contributed, as, e.g., their retention by the Council for hanging, or for the Association's album, or their return to members contributing them, etc., that it would be better if prints were contributed unmounted, with their corners only held, by being slipped into slots in a card support. It was ultimately decided to refer the question to a committee to be called upon before the end of the month, who should finally settle it. The President drew particular attention to the appeal made in the circular notice of this meeting, to members, asking them to contribute specimens of their work to decorate the walls of the Club. He felt it would be only a



fair return for the kindness that the Club Committee had in many ways shown the Association. The limelight was then turned on, and the Association lantern brought into requisition for the purpose of exhibiting slides made by members of the Association. A large number of slides were shown, including some very good work indeed. Amongst those exhibited were slides by Messrs. Brightman, Norgrove, Davey, Stephens, Lavington, Bond, Butler, Miller, and Hayman. Mr. Duncombe, jun., assisted with the lantern, which gave a very effective light. Some professional slides of Derbyshire views were also shown, and the exhibition was on the whole very successful both in the quantity and the quality of the work brought by members.

**Croydon.**—At the ordinary meeting on the 27th ult. the President, Mr. Maclean, in the chair, Mr. H. J. Burton, assisted by Mr. A. Braham, gave an able and attractive demonstration of the "Carbon Printing Processes." Among the advantages claimed for this well-known but little used means of printing are its permanency and the power of obtaining prints in a large range of colours, including engraving black, brown, sepia, red chalk, and greenish blue. The demonstrators deftly illustrated the various manipulations, including squeezing the exposed print on to the single support, stripping the back of the tissue from the support, developing the latent image with water at 100° F., rinsing and soaking in alum bath. Opals were also operated upon; and the production of prints by what is known as "double transfer" shown. In connection with the discourse Mr. Burton showed an actinometer of his design, exceedingly useful for not only carbon printing but other occasions where the actinic power of the light requires to be gauged. The President expressed wonder that so few amateurs had tried the carbon process, having regard to the charming results which are so easily attainable. Mr. Charles Hussey said that although in the course of a long experience he had attended numerous demonstrations he had never been more interested than he had that night; he strongly recommended the process for portraiture, and had found the film of great value for transparency work (collodio-bromide). This meeting concludes the ordinary fortnightly gatherings held during the autumn, winter, and spring, and the summer excursion fixtures were inaugurated on Saturday, April 25th, by a trip to Dorking. The following excursions were announced: May 2nd, Leatherhead (by Mr. Maxey); May 9th, Merstham (by Mr. Maclean); May 16th, Mitcham (by Mr. Blow); May 23rd, East Grinstead (by Mr. Cheshire).

**East London.**—This newly formed Society last week held a special general meeting (Mr. E. Stone presiding), when the rules and bye-laws were submitted and approved, arrangements for the ensuing season were announced, and outings fixed for the first Saturday and third Thursday in each month. Special competitions are also being arranged in various subjects, and the Society is making rapid progress. The meeting nights are first and third Mondays in the month, at the coffee-room "London Apprentice," 333, Old Street, E.C. Particulars of membership and any information will be given by the Hon. Secretary, H. G. Wallis, 84, Shore-ditch, E.

**Faversham.**—The annual general meeting of the members of this Society was held on the 21st ult., Dr. C. J. Evers (Vice-President) in the chair. The Chairman alluded to the gratifying quantity and quality of the members' work sent in for the first annual competition, comprising 99 landscapes, 32 figure studies, 24 architectural, 10 instantaneous, 10 opalines, 76 lantern slides, making a total of 251. These photographs, together with other photographic work, including a splendid collection of prints lent by the Editor of the AMATEUR PHOTOGRAPHER, were on view to the public at the Minor Hall of the Faversham Institute, on April 28th, 29th, 30th, and May 1st, and in connection with the exhibition there was an entertainment of dissolving views given in the Lecture Hall, in aid of the Institute Exits Fund; subject, "The AMATEUR PHOTOGRAPHER Prize Slides, 1890." The report and accounts having been passed, Lord Throwley was re-elected President; Dr. C. J. Evers, Mr. W. C. Stunt, and Captain C. F. Hooper were elected Vice-Presidents; whilst the following members were chosen to form the Committee, viz., Messrs. C. Cremer, F. Crosoer, A. N. Filmer, F. C. Jackman, M. Laxon, and C. H. Semark. Mr. Percy Dan consented to take the office of Hon. Secretary. The results of the photographic competition, as adjudicated by Mr. T. Barns, were as follows:—Special prize from Lord Throwley for best print in the competition, awarded to W. C. Stunt, for opaline entitled "Waverley Lodge." Special prize from Mr. W. C. Stunt for best lantern slide in the competition awarded to Dr. C. J. Evers for slide entitled "A Gloucestershire Valley." Class 1, Landscape (three best prints under one motto): 1st, W. C. Stunt, (1) Pigeon-house, (2) Bridge on the Fill, (3) On Tilford Green; 2nd, C. Cremer, (1) Old Palace, Charing, (2) Sharsted Walk, (3) Painters' Forstal; V.H.C., For Bridge over Fill; H.C., F. Crosoer, for Thames Views; H.C., Captain Hooper, for "The Carriage is Ready." Class 2, Instantaneous (three best prints): 1st, Dr. Evers, Nos. 3, 5, 1, Rough Sea at Herne Bay; 2nd, H. Dan, (1) The Start, (2) Pea-picking, (3) Off Sheerness. Class 3, Architectural (three best prints): 1st, Dr. Evers, (1) Gloucester Cathedral, Interior, (2) Ditto South

Porch, (3) Ditto Interior, the Organ; 2nd, M. Laxon, (1) Ospringe Church, (2) Selling Church, (3) Queen's Court; H.C., C. Cremer Palace Gate and Lenham Church; Class 4, Figure Studies (three best prints): 1st, F. Crosoer, (1) A Stile at Sharsted, (2) The Photographer Photographed, (3) In Eastwell Churchyard; 2nd, C. Cremer, (1) Now, All Still, (2) In Charge, (3) Counsel; Class 5, Opalines (three best prints): 1st, W. C. Stunt, (1) Waverley Lodge, (2) A Creek, (3) The Organ; 2nd, H. Dan, (1) Whitehill Stream, (2) Medway at Maidstone, (3) Church Road in Snow; Class 7, Lantern Slides (the best set): 1st, F. Crosoer, set No. 1, eight slides, Thames at Sonning, Itfley Mill, Park Place Boathouse, Sunbury, Sandford Mill, Drinking Fountain, Nuneham Boathouse, and Otterden Woods; 2nd, Dr. Evers, set No. 1, eight slides, A Gloucestershire Valley, Court House, Painswick, In Castle Grounds, Adley, South Porch, Gloucester Cathedral, Hoar Frost, Naboth's Vineyards, Surf, Herne Bay, Pier, Herne Bay; H.C., Oare Creek, and Interior Gloucester Cathedral; H.C., Interior, Boulogne Cathedral.

**Glasgow and West of Scotland.**—The closing monthly meeting for the session of this Association was held on the 20th ult., Mr. John Morison, jun., President, in the chair. Five new members were elected. The President gave a report on the International Photographic Exhibition to be held in the Fine Art Institute in September. Mr. John Stuart, Buchanan Street, showed his system of taking photographs by means of the flash light. He also exhibited some very beautiful work done by this means. Mr. Stuart then photographed five of the members of council in a group, and the negative was developed and shown to the meeting. The meeting closed with the usual display of lantern slides by members. An outdoor meeting was held on the 18th ult., which was eminently successful. Fifteen members turned up and travelled by train to Ayr, where a brake was in readiness to convey them to Dunure and Maybole. Some excellent negatives were secured, and a number of lantern slides from same shown at the monthly meeting.

**Hackney.**—The ordinary meeting was held on the 23rd ult., Mr. J. O. Grant presiding. Various books were announced as having been presented to the library, which bids fair towards becoming a useful auxiliary to the Society. The Hon. Secretary showed a compact little hand-camera, called Itakit, made by Messrs. Matthews, of Birmingham. It is made to take twenty-four plates, lantern size, and was thought very fair at the price. Mr. Grant showed some work on Fry's naturalistic paper. The Chairman then called on Mr. J. A. Sinclair for his paper and demonstration on "Lantern Slide Making." After mentioning the different methods of slide making, Mr. Sinclair proceeded to expose some Ilford, Alpha, and ordinary lantern plates with success, the burners used being the ordinary seven burners of the hall, and consequently difficult to judge by. Various questions were asked incidentally. Mr. Sinclair afterwards toned the Alpha paper, which was shown at different stages of toning (wet) through the lantern. After the demonstration, slides were put through, the work of Messrs. Grant, Funston, W. Fenton Jones, Rider, Gerard Smith, Herbert Smith, E. H. Jones, Hasdell, Hull, Beckett, and others. Messrs. Mawson and Swan also sent their prize set.

**Holborn.**—The monthly lantern evening was held on the 24th ult., when Mr. T. O. Dear (Vice-President) presided over a large attendance of members. A number of slides of the Paris Exhibition, lent by Mr. Merne, were passed through the lantern, followed by some from Messrs. Mawson and Swan, showing the various colours, ranging from red to black, obtainable on their lantern plates. Slides by Messrs. Chang, Elsworth, Gay, Miller, and Thompson, members of the Club, were also shown. The prize for the best "group" taken at the last club outing (presented by Mr. Brocas) was awarded to Mr. Dear, who announced that he would give a similar prize for the best "group" taken at the outing to Pinner on the 9th of May.

**Huddersfield.**—On the 21st ult., the above society held its second annual exhibition of work. The number of prints shown was not large, but of good quality. Messrs. Young, Charlesworth, and the Secretary showed some 150 stereoscopic transparencies. A new feature as compared with the last exhibition was a show of apparatus, the trade being well represented by Mr. W. F. Piggott and Mr. F. N. Heath. We are glad to notice that a number of stereoscopic cameras were exhibited. Several specimens of home-made cameras, shutters, etc., were shown by members. A lantern exhibition was also given. Slides were shown by Messrs. Mellor, Madden, Crook, and Dean. A series of views, chiefly instantaneous, of yachts, were shown by Messrs. S. Priestly and Son, of Egremont, Cheshire, who recently took the silver medal at the Liverpool Exhibition for that class of work, which were greatly appreciated by all present. The exhibition was a decided success, the rooms being crowded all the evening.

**Ireland.**—The usual monthly technical meeting was held on the 23rd of April, Prof. J. Alfred Scott, M.B., Vice-President, in the chair. After the usual business had been disposed of, the Boston Camera Club Slides—"Illustrated Boston"—were put through the lantern, and were appreciated by those present. The following



members also contributed slides: Messrs. Hargrave, Inglis, Ruthven, and Mathews.

**Leeds.**—On the 20th ult. a paper on "Bromide Printing and Enlarging" was read by the Hon. Sec. (Mr. S. A. Warburton). In the absence of the President the chair was occupied by Mr. J. W. Refitt. In introducing his subject Mr. Warburton pointed out the advantages of the bromide process, the chief of which were that the process can be worked independent of daylight, the rapidity with which prints can be produced, and the close resemblance that a good bromide print has to a platinotype picture. In describing the manipulation of the process the various classes of paper in the market were referred to, the "slow rough surface" being the one which seemed to yield the best results. The great secret of obtaining pure whites in the prints was a liberal use of the acid solution after fixing, and for this a one per cent. solution of sulphuric acid was the best. A method of printing in skies from cloud negatives was explained and illustrated. In dealing with the subject of enlarging, the kind of apparatus for use both with daylight and artificial light was described, the former giving by far the best results and being less expensive to construct; indeed, any amateur at a cost of a very few shillings could make one for himself. A number of enlargements and bromide contact prints were exhibited, as were also the enlarging apparatus for use with daylight and artificial light, and in conclusion Mr. Warburton developed before his audience a fine enlargement made on Ilford slow, rough-surface paper. At the conclusion of the paper an interesting discussion followed.

**Newcastle-on-Tyne.**—At the ordinary meeting on the 21st of April, Mr. J. P. Gibson in the chair, arrangements were made for a series of competitions confined to amateur members of the association (particulars of which will be announced shortly), and for five outdoor meetings during the season, which are as follows, viz.: Ripon and Studley, Seaton Sluice and district, Bellingham, Wooler, and Stocksfield. Mr. J. Hedley Robinson read a paper on "Carbon Printing," and practically demonstrated the process.

**North Middlesex.**—On the 25th ult. a number of the members took part in the field-day, as arranged, and proceeded to Edgware. On the 27th ult., Mr. F. L. Pither in the chair, Messrs. Marion and Co.'s representative, Mr. Dickenson, exhibited and explained the action of the Radial hand-camera, and showed samples of Eikenogen cartridges, which were distributed among the members. Messrs. Goodhead and Cox reported that they had tested the plates sent by Messrs. Marion and Co., which they had found of good quality, as shown by the prints exhibited. Mr. Taylor showed prints on the chloride of silver emulsion paper sent by Mr. O. Scholz, and said he had found it easy to work, great variety in the tone being obtained. A special meeting was then held, to elect a President in the place of Mr. Humphries, resigned. Mr. J. W. Marchant was elected by a large majority.

**Paisley.**—The annual meeting took place on the 23rd ult. Mr. James Donald, jun., occupied the chair. The Secretary's report showed that ten members had joined the Society during the year. Outdoor excursions had taken place during the summer months to Bridge of Weir, Port Glasgow, Castletemple, Gourrock, the R.N.Y.C. Regatta at Rothesay, and Hawkhead. The Treasurer reported that a balance of £5 was on hand. The following office-bearers were elected for the ensuing year: Hon. Presidents, Messrs. H. H. Smiley and Stewart Clark; Hon. Vice-Presidents, Messrs. R. Harris, James Donald, jun., and James Barr; President, Mr. Matthew Morrison; Treasurer, Mr. Robert D. Caldwell; Secretary, Mr. David B. Jack, Glencairn, Blackhall; Council, Messrs. Robert Ferrier, Alexander Kilpatrick, Alexander Gardiner, jun., A. F. McCallum, and Thomas H. Taylor; Lantern section, Messrs. Thomas Rastall, A. Kilpatrick, and T. H. Taylor.

**Putney.**—A highly interesting and instructive lecture and demonstration on "Alpha Paper" was given on the 25th ult. by Mr. Howson. Several other short practical demonstrations by the members followed. Mr. Faulkner having exhibited an ingenious piece of home-made apparatus for printing papers and plates, by its aid printed and developed with pyro an excellent half-plate transparency on ground glass, describing the process to the uninitiated. Mr. Barrett followed with a half-plate negative, which he developed with pyro. Messrs. W. and G. E. Martin then developed about one dozen whole and half-plate platinotype prints, hot bath process, describing at length the permanency, simplicity, and beauty of the process.

**Rossendale.**—Monthly meeting, April 27th. The subject, "Naturalistic Photography," was fully discussed by the members present. By the kindness of the Editor of the AMATEUR PHOTOGRAPHER, Competition Prints No. 18 were passed round for inspection.

**Sheffield.**—An interesting lecture was given on the 22nd ult., under the auspices of the Sheffield Camera Club, by Mr. W. Lamond Howie, F.C.S., of London, his subject being "To Ober-Ammergau and back in 1890." Mr. G. T. W. Newsholme, President of the Society, occupied the chair, and there was a large audience. The lecture was illustrated by 100 photographic lantern slides,

which Mr. Howie was enabled to take on his way to and from Ober-Ammergau, and also during his stay at that place, including some scenes from the Passion Play. He visited Bonn, Nuremberg, Cologne, Strasbourg, Munich, Innsbruck, the Bavarian Alps, the Tyrol, and many other cities and districts, and from each he showed excellent photographs illustrating the different styles of architecture to be found in the cathedrals and other magnificent buildings. The interior and exterior, and also the notable details of each building were given, besides views of the streets, museums, bridges, art treasures, and other objects of beauty and interest. Special reference was made to Cologne Cathedral. Nor were the country districts through which Mr. Howie passed neglected, as was shown by his remarkable good genre subjects, including life in the Tyrol. A number of the photographs of the Bavarian Alps were also examined with much interest, and, in alluding to his views of the Passion Play, the lecturer assured his audience that there was no foundation for the rumour that the play would not be repeated in the year 1900. Views of geological interest were also shown, including the curious earth pyramids in the Austrian Tyrol.

**Southport Social.**—On the 22nd ult. Mr. Cross gave a very instructive demonstration on the "Trimming and Mounting of Prints." The 8th ult. was a lantern night, when a large number of slides were exhibited, amongst which were some made by Mr. Wilkinson, from very old negatives of Southport, and which were much appreciated. On the 15th ult. Mr. Cross was very successful in a demonstration on "Transparency Making," on ordinary Ilford plates, the results being very gratifying.

**Spenn Valley.**—The April meeting of this Society was held on the 14th ult. Dr. Farrow (President) was in the chair, and there was a large attendance. Several new members were enrolled, and officers nominated for the coming year. The President gave some interesting information on the new Kallotype paper process, and Mr. A. H. Knowles exhibited a number of members' slides by means of the lantern.

**Warrington.**—The fourth annual exhibition of lantern slides, the work of the members of the above society, took place in the Co-operative Hall on the 21st ult. There was a large attendance, and the exhibition was the best which has yet been held. The chair was occupied by Mr. T. J. Down (President of the Society). There were four exhibitions of slides during the evening. All the slides were the work of members, namely, Miss Harding, and Messrs. H. N. Houghton, J. Smith, jun., J. Chorley, jun., F. Pearson, W. Robinson, Kirby (Bridge Street), J. Hallows, J. Pritchard, C. Yonge, J. Skelton, and J. Harding. The work was far superior to that previously exhibited by the members, and the exhibition was rendered additionally interesting owing to the fact that most of the places illustrated on the screen were familiar to the audience. The Dingle at Appleton appeared to have been a favourite rendezvous of the members, judging from the large number of views of it which were shown. It is certainly one of the prettiest spots within easy access of the town. Among other local views thrown on the screen may be mentioned those of the locks at Bewsey, Twenty-step Bridge at Stockton Heath, St. Thomas' Church, the ornamental pond in the park, Horsemarket Street, Mr. John Crosfield's greenhouses, the new bridge over the Mersey at Walton, with numerous scenes on the Ship Canal. There were also portraits of Mr. Beaumont, Mr. David Lowe, the Co-operative Hall keeper, and of several members of the Photographic Society. The applause of the audience was hearty and frequent.

**West London.**—At the meeting on the 24th ult., the President in the chair, five new members were elected. The President announced that though the Society had not gained the challenge cup at the Crystal Palace, no less than four members had been awarded medals, viz., Messrs. Hodges, Colls, Whiting, and the Hon. Secretary. Mr. Blackmore's paper on "Legitimate Photography" was read by Mr. Hodges, the writer having gone to America. Mr. C. Whiting differed from the opinion of the writer, in so far that he considered a certain amount of brush work quite legitimate. Dr. Low quoted the opinion of an impressionist that artistic effects could only be obtained by lenses with large apertures, so that the principal object only should be in focus. Mr. Whiting believed in sharpness all over, and afterwards producing the required effect with collodion masks, which he described. Mr. Hodges differed from Mr. Blackmore as to the question of flare spot, also as to cutting down prints, and the use of the brush on prints. He saw no harm in doctoring negatives. The President wound up the discussion. Mr. R. Whiting showed a photograph taken with the new automatic machine. A long discussion took place on the subject of getting better premises for the Society.

**Woolwich and District.**—The last lantern night of the season was held on Thursday evening the 23rd ult., at the Masonic Hall, Anglesea Hill, Plumstead, Mr. Desforges working his lantern. The meeting was well attended by members and friends, and a very pleasant evening was passed.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4643. **The Moselle.**—Can any reader give me any information with regard to photography and the expenses of living in the above neighbourhood?—**CAMBRIDGE.**

4646. **Names on Negatives.**—Can any reader give me the best way to write names of subjects on negatives and what materials to use? Any hints will oblige.—**NELLA.**

4647. **Tripod Stands.**—Can any one tell me if Lancaster's tripod stands are as good and as cheap as any that can be got, either for home use, touring, etc.? Also which of his numerous kinds is considered the best?—**PIPER.**

4648. **Hare's Camera.**—Having just purchased a first-rate half-plate Hare's camera, I am now looking for a first-rate lens for the same, and having lately seen Taylor's lenses spoken very highly of in numerous photographic works and journals, I shall be much obliged if any one who has had any experience of them will tell me if it would be possible with the aid of a small stop to obtain equally good results with one of these, and with one of the more expensive lenses of Ross, Swift, Dallmeyer, etc.? Would a Taylor lens require much more stopping down for ordinary landscape work?—**MARSHBANK.**

4649. **Smallest Stop.**—What is the smallest stop that can be safely used for landscapes in a good light without producing flatness, destroying brilliancy and atmospheric effect, etc.?—**CHARLES.**

4650. **Camera Case.**—What is the best, lightest, and most serviceable material for a camera case, and can any one recommend me the cheapest place to go for one, if possible naming price for half-plate size?—**CHARLES.**

4651. **Warwick and District.**—I ask on behalf of myself and three brother amateurs who intend spending three clear days in Whitsuntide week in Warwick and the surrounding district, what are the best places to visit and photograph, and in what order to make the most of our three days? We are good walkers and do not mind distance so that we may get good views.—**BUCKLER.**

4652. **Intensifier.**—Would any of your readers kindly tell me how I can dissolve mercuric chloride (bi-chloride of mercury)? I have about 100 negatives to intensify, but the mercury solution I have (2 oz. mercury, 6 of water) has now been seven weeks and has not dissolved yet. I tried boiling it to-day with no better results; it only turned it into like thousands of pieces of small glass dust. I should be pleased to know also if sulphate of soda or ammonia is the best for flogging over the film after whitening in the mercury. My negatives, after being treated with the above, do not seem much denser than before doing.—**H. S. B.**

4653. **Slowest Exposure, Kershaw Shutter.**—What is the time of the slowest exposure which can be made with Kershaw's shutter?—**A. D. J.**

4654. **Increase of Speed, Kershaw Shutter.**—Can any reader inform me what is the increase of speed gained by each turn of the screw in Kershaw's shutter?—**A. D. J.**

4655. **Potash Developer.**—I am using the potash developer which Mr. Wall advocates in his "Dictionary of Photography," but I find it very slow. Can any one tell me how to hurry up development with it? I use now more of the potash solution than is recommended?—**KENDAL.**

4656. **Colour in Landscape.**—In the foreground a laburnum tree in full blossom, middle distance and

distance an ordinary view of green fields and trees, sky clear blue with white clouds. How am I to photograph a view which includes the above, so as to preserve the relative lighting values of the yellow, blue, and white, using one plate only for the negative? Also how must I modify my pyro-ammonia developer?—**ATICH GEE.**

4657. **Photinus Oil.**—Advertised as being free from smell or smoke. If any of your readers have tried this oil for optical lantern work I shall be glad to hear if their experience of it corroborates its alleged good qualities.—**J. W. R.**

4658. **Liverpool and District.**—Can any Liverpool photographer tell me the most interesting places or views within an easy distance of Waterloo?—**SOUTHERNER.**

4659. **Reproduction.**—Can any reader of the **AMATEUR PHOTOGRAPHER** give me a list of the different processes for printing and reproducing photographs, including silver, autotype, photogravure, etc., also photo-mechanical processes? Is Autotype the same as the carbon processes?—**NIEPCK.**

## QUERIES UNANSWERED.

April 24.—Nos. 4638, 4642, 4643, 4644.

## ANSWERS.

4602. **Intensification.**—The answer to the question of "Foreigner," No. 4297, in the **AMATEUR PHOTOGRAPHER** for last week, answers your question also.—**CAILLOU.**

4602. **Intensification.**—The only possible way to prevent a sky from being intensified is to soak the plate in water till the film is soft, then blot with blotting paper, prop your negative up, sky at the top, swab on the mercury solution with a brush, working from the outline of the landscape downwards, then wash and blacken in the same way.—**OSIRIS.**

4608. **Card.**—The best thing to use is stout drawing paper, which may be had from almost any stationer.—**OSIRIS.**

4609. **Matt Varnish.**—The question of how to apply a matt varnish without getting it on the film is merely one of practice. Personally, I would guarantee to varnish a hundred negatives and not have two failures.—**OSIRIS.**

4609. **Matt Varnish.**—The best way is to apply this as ordinary varnish. It is difficult to prevent it getting on the film, but it is only a question of practice, as you will probably find if you experiment a few times.—**CAILLOU.**

4611. **Madaira, Photographing in.**—A very good article on this appeared a year or two back in the **AMATEUR PHOTOGRAPHER**, giving all particulars.—**OSIRIS.**

4615. **Shutter.**—Solution of india-rubber is the thing, made by dissolving 10 gr. of rubber in 1 oz. of bisulphide of carbon. Why not stick little bits of black coat plaster over it?—**OSIRIS.**

4619. **Development.**—This query is a poser. If the print is evenly and thoroughly soaked it should lie perfectly flat; if it does not, it would be advisable to wash well and dry, and then moisten the parts which require local treatment afterwards.—**OSIRIS.**

4620. **Curled Mounts.**—Damp the mounts before mounting the print, so that print and mount will contract to the same extent when drying.—**CAILLOU.**

4620. **Curled Mounts.**—The secret is to mount on the back of the mount a piece of thin paper the same size as the print. As both sides are now damped, the pull of the one is obviated by the pull of the other.—**OSIRIS.**

4621. **Development.**—I cannot refer you to the letter, but probably the following is what you refer to. When the plate is sufficiently developed, rinse well, and immerse in

Chrome alum	...	...	16 parts.
Citric acid	...	...	4 "
Water	...	...	1,000 "
Sugar	...	...	18 "

Allow to soak for two minutes, drain, and dry. Wash the plates thoroughly before fixing when at home.—**OSIRIS.**

4622. **Photographing Sunsets.**—It is quite possible to photograph sunsets, only it must be borne in mind that the shape, not colour, of the clouds must be looked to. Gotz's orthochromatic plates, about f/22 stop, exposure varies from one-sixteenth to half a second according to colour. Developer weak in pyro first, then more added towards the last.—**OSIRIS.**

4623. **Stained Negatives.**—Insufficient washing between bleaching and blackening the cause, and possibly also non-elimination of hypo. This is a fault extremely difficult to correct. The best remedy is stated to be treatment with a weak acid solution of chloride of gold, then washing and fixing.—**OSIRIS.**

4624. **Changing Bag.**—You will find directions in back numbers, or in the "Amateur Photographers' Annual," one of the most useful books ever published.—**OSIRIS.**

4625. **Density.**—Increase of pyro means increase of density.—**OSIRIS.**

4629. **Permission to Photograph.**—Apply to the authorities in each place, who will give you the necessary permit.—**OSIRIS.**

4630. **Godstone's Print Washer.**—The washer can be had from almost any dealer; also Ponders and Baker, 47, Featherstone Street, Finsbury, London, E.C. Houghton's address is 83, High Holborn.—**OSIRIS.**

4631. **Borax Bath.**—The following I have used for ten years, and it has always been very successful:—  
Stock Solution.

Chloride of gold...	...	...	15 gr. tube
Water	...	...	15 drm.
For toning, use the following:—			
Chloride of gold	...	...	1 drm.
Ground borax	...	...	2 oz.
Water, warm	...	...	12 "

I find this always gives beautiful purple tones. After toning, wash well, and place in a bath. To fix, hypo 1 oz., water 20 oz., leave prints in this bath for 10 minutes, then wash well for several hours.—**H. S. B.**

4631. **Borax Bath.**—The tone of an albumen print does not depend entirely upon the composition of the toning bath; the quality of the negative has more influence. A thin, flat, quick-printing negative gives brown tones; with a dense, slow printer it is less difficult to get the purple tone. The brand of paper you name is not the best for obtaining the tone you wish, unless your negatives are suitable. You have too much borax in the bath. Try this:

Borax	...	...	2 gr.
Boiled water used warm	...	...	10 gr.

Then add 2 gr. gold chloride for each sheet of paper you wish to tone.—**A. R. F. E.**

4631. **Borax Bath.**—  
(A).  
Borax ... .. 1 oz.  
Water ... .. 80 " (3 gal.)  
Dissolve, and keep in a stoppered Winchester.  
(B).

Gold chloride ... .. 15 gr.  
Distilled water ... .. 15 drm.  
Dissolve, and keep in a stoppered bottle. Add 1 drm. of B to 8 oz. of A one hour before bath is wanted. This quantity of gold should tone one sheet of paper to a deep purple if prints are from suitable (vigorous) negatives.—**JAMES WOOD.**

4632. **Norway and Sweden.**—Customs authorities very good. If only small amount of baggage will probably not be examined. As a precaution, write the following across the packets of plates: "Photografiske plader maa ikke aabnes uden ven rodt lys." If a hand-camera is used, can strongly recommend Thomas' extra rapid thickly coated plates.—**C. E. G. K.**

4633. **Lens and Developer.**—(1) The sole advantage of the portrait is that it is twice as quick, but the disadvantages quite overbalance this rapidity. (2) Use your ordinary developer with less pyrogallol solution; hydroquinone does not suit this class of work. (3) It depends upon how sharp you want the background to appear in the print.—**A. R. F. E.**

4633. **Lens and Developer.**—(1) Portrait lens is best for portraits, the next best a single lens. Read and thoroughly digest the articles on "Home Portraiture" now appearing in **AMATEUR PHOTOGRAPHER**. (2) Paul Lange's soda developer answers admirably for Ilford. (3) Depends on focus of lens; background should be out of focus as a general rule.—**JAMES WOOD.**

4633. **Lens and Developer.**—In answer to "Developer," I find for the Ilford plate the following to answer and give better results than any other you could use:—

Hydroquinone	...	...	No 1.
Potassium bromide	...	...	2 drm. 2 scruples.
Sulphate of soda	...	...	1 scruple 10 gr.
Water	...	...	2 oz.
	...	...	No 2.

Soda hydrate ... .. 1 drm. 2 scruples.  
Water ... .. 2 oz.

For development, use equal parts of No. 1 and No. 2. This will keep for a long time if well stoppered. Take 1 oz. of No. 1 and No. 2 for developing. This will do for a dozen or more plates, as it does not lose its power.—**H. S. B.**

4634. **Lens.**—Yes, but the subject included will be greater than if you used a longer focus than the portable symmetrical.—**A. R. F. E.**

4634. **Lens.**—If full aperture is to be used, No. 5 will be best, as the focus of a lens should, as a rule, be equal to the diagonal of your plate. But the medium stop of a No. 4 is stated to cover a half-plate properly. For ordinary work, a lens with a longish focus is preferable.—**LSIS.**

4635. **Hire of Hand-Camera.**—If "Detective" and "M. A. J." will communicate with me I can tell them about hiring a detective. (Address with Editor).—**J. R. W.**

4636. **Matt Surface.**—Rub them very gently with the finest powdered pumice stone in a circular direction, but it needs care. By a careful arrangement of the lighting the prints could be copied as they are.—**A. R. F. E.**

4636. **Matt Surface.**—"Phos" had better mount the prints to be copied on a piece of cardboard, and



rub the surface with some powdered pumice stone with the tip of the finger. A much better result can be obtained by mounting the print in optical contact with glass, and then copying as when mounted in this way the granularity of the paper is not seen in the copy.—CAILLOU.

4636. **Matt Surface.**—You do not require to do anything of the kind if you place the print at such an angle to the light that the surface does not reflect on to the lens. I have copied albumen prints that showed no difference whatever from the original, and might have been taken direct. Of course, the smoother the prints the better.—ISIS.

4637. **Copyright.**—Yes, certainly.—A. R. F. E.

4637. **Copyright.**—If the photographs of the pictures have been copyrighted you certainly have no right to copy them. I believe that even if the photographs are not copyrighted at the time you copy them, the owners of the negatives can afterwards copyright them, and prevent any future sales of prints from the negatives you have made. The best way would be to take a direct photograph of the pictures.—CAILLOU.

4639. **S.W. of England.**—It depends entirely on the kind of picture "Alpha" prefers. In the neighbourhood of Torquay it is all picturesqueness; Penzance affords as well seascapes with fishing boats, romantic headlands, and ancient monuments. Near Torquay, the best pictures are at Austey's Cove, Babbicombe Bay, Oddcombe Sands, Watcombe Rocks, Cockington, and Compton Castle. Six miles off is Teignmouth, where fair seascapes are to be had. Inland, the charming views round Dartmoor are not far off, as Holne Chase, the Buckland drives, the Bovey Valley, Becky's Falls, the lovely village of Manaton, Lustleigh Cleve, and some of the Tors, as Hey Tor, Rippon Tor, and others. On the other side is Totness, Berry Pomeroy, and the Dart. Penzance has many picturesque bits, as Castle Horneck, Trembath, Trevayler, Gulval, Trersiffe, Buryas, Blue Bridge, etc., but the stranger would have a difficulty in finding them, as the neighbourhood is a network of footpaths. St. Michael's Mount is, of course, full of interest. For seascapes, Penzance is absolutely unrivalled, and the quaint (and odorous) fishing village of Newlyn, beloved of artists, is only a mile off. In the Land's End districts are picturesque coves like Porthcurnow, Porthgarra, etc., and numerous grand headlands, as the Land's End itself, Castle Trevery, Tolpeda-penwith, Pardenick Point, Gurward's Head, etc. Ancient monuments are numerous and most interesting, as the stone village of Chrysanster (pre-Roman); stone circles, as Boscawen-un and Lamorna; cromlechs, as the Lanyon Quoit, Chun, etc.; inscribed monuments, as Men-scra, and at Blue Bridge, and the curious Men-an-tol. Further off is the Lizard Point and the famed Kynance Cove, and the lovely views on the Fal, which are best at Malpas and King Henry's passage. St. Ives is only seven miles from Penzance, and Helston, which has some very picturesque bits, about the same.—G. LACY.

4640. **Landscapes.**—Distance is better rendered. Yes, but of no consequence.—JAMES WOOD.

4640. **Landscapes.**—You will have a narrower angle, that is, longer focus lens, and so distant objects will appear larger, but you will not be able to include so much subject. Yes, the rectilinearity is destroyed.—A. R. F. E.

4641. **Lens for Landscape Work.**—A long-focus single lens.—JAMES WOOD.

4641. **Lens for Landscape Work.**—A single landscape lens, such as Taylor's, Dallmeyer's, or Grubb's is much better for views than a rectilinear. Don't use a wide-angle lens if you can possibly avoid it. Taylor's rapid view lens has a great reputation. Address Taylor and Hobson, 6, Southampton Street, Holborn. Price reasonable. If you use one of the combinations of a R.R., you double the focus, get a larger image, and have to rack the camera out very far. Some cameras will not do it. Besides this, you must expose four times as long.—ISIS.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

LEO.—Both your negatives are much over-exposed and are consequently flat. We should have thought, under the conditions you name, viz., bright diffused light and  $f/18$  and an ordinary plate, two seconds would be a full exposure for the subject.

C. A. T.—There is not the slightest objection to your using rusty crystals of ferrous sulphate; when weighing out any quantity, allow a little for waste (about 20 gr. for every ounce), place the crystals in cup or measure, pour on them just enough water to cover them, adding a little sulphuric acid to the water first, stir round sharply once or twice and pour the water off. There is no fixed proportion between a saturated solution and the dry

chemical, even with the same chemical; the strength of the so-called saturated solution varies according to the temperature. It is advisable, if you want to know how to account for results, to use definite strength solutions. You will find a table at the end of the "Dictionary" which will tell you the solubility of most chemicals.

REX.—(1) Never allow the sun to shine on your sitter—whilst you are taking him, at any rate. Two seconds would be ample though. (2) It is advisable always to use the formula suggested by the maker. The following we have used with success for most brands:

(A).	
Pyro ... ..	1 oz.
Glycerine ... ..	1 "
Methylated spirit, to ... ..	9 "
Citric acid ... ..	40 gr.

(B).	
Liq. ammon. fort. '880 ... ..	1 oz.
Distilled water ... ..	9 "

For normal exposure mix equal parts of each and dilute with 33 parts of water and add restrainer as required. (3) The following is a good formula:

Chloride of gold ... ..	1 gr.
Acetate of soda ... ..	30 "
Carbonate of soda ... ..	15 "
Distilled water ... ..	10 oz.

for every sheet of paper; leave for twenty-four hours before using. (4) The longer focus lens is certainly preferable for portraiture. (5) Old negative glasses are utterly valueless.

T. T. S.—Both negatives are grossly over-exposed, the prints are over-toned. The great difference between over and under exposure is this—under exposure gives want of detail, especially in the shadows, with generally dense high lights or extreme contrast; over-exposure gives plenty of detail, especially in the dark shadows, but the negatives are thin and wanting in contrast. Send us up half-a-dozen numbered prints and we will point out examples of what we have said.

CAMERA.—The plate is very much over exposed and under developed; we should have thought about  $\frac{1}{15}$  secs. plenty. Marion's address is 22, Soho Square, London, W.

SPIKE.—It looks to us as though you had been working against the light, had under-developed and used too much accelerator to commence with. You give us no data as to developer.

ENTERPRISE.—The Garden Party is much too cramped. You would have done much better to have merely had a group, minus tea table; technical work, good; cows, good; we should cut off the boys and one inch of foreground. Portrait of clergyman, good. Miss Katie, a little too much top light—a somewhat longer exposure would have given you a rather more harmonious result; the print is a little bit hard; snow a little too hard in the high lights, the result of too much pyro in your developer. Please number future prints. Shall we return these?

F. W. BROCK.—Please let us know whether you want the background to roll up or not, to stand the outdoor weather, or to be kept under cover. We are much obliged for the salt; we will make comparative experiments and send you a report before noticing same. From the formula you give, which by the bye is different to that usually assigned to the sesqui-carbonate, it should be midway between the two usual salts.

V. SUTHERLAND.—The alum and acid bath is used to prevent yellow stains caused by the oxidation of the iron developer. Your stains may be due to three causes—(a) insufficient clearing; (b) insufficient washing between clearing and fixing; (c) use of hypo which has been previously used for plates. The flashing out of the dark marks is probably due to dirty fingers. Send us up a spoilt print or two and we will help you further.

HISPANIO.—Your name is entered.

J. H. R.—We have examined the camera, and think it is simple and efficient, and one which should be able to turn out good work. We should advise you to call on the maker at 20, Bridgewater-square, Jewin-street, E.C.

J. COLLIS.—The lens you name is a very good instrument, and quite suitable for a quarter plate camera.

BEGINNER.—We do not quite understand what are the diameters of your stops; if  $f_{10}$ ,  $f_{16}$ ,  $f_{20}$ ,  $f_{22}$ , of an inch, they are respectively  $f/11$ ,  $f/16$ ,  $f/20$ ,  $f/22$ , and the exposure would be as 1, 1, 3, 5, 6.

STRUGGLER.—Probably your fault lies in using too much pyro in your developer, consequently you get your high lights too dense. Send us up some specimens, and then we'll try and put you right.

WILLIAM SEATON (Quebec).—For film negatives you can print from the celluloid side of the negative, and thus save the double transfer. The best books on the carbon process are Monckhoven's treatise and the A.B.C. Guide, published by the Autotype Company, who would supply the materials, but they can also be got from any dealer either this or your side of the water.

H. M. H. P.—We should advise you to see the tripod reviewed by us in last week's issue, p. 301; though not very high, it is very rigid and not cumbersome. Letter by post.

SUTTON.—We place lenses as follows, 1, 2, 3, 5, 6, 4.

E. L. DELARNE.—At the price you mention you cannot expect all the good qualities of a hand-camera, but we have seen very good work done by the camera you mention.

CHLORIDE PAPER.—Before squeegeeing chloride prints to glass it is necessary to either polish the glass with French chalk or else rub over it a little solution of wax:

Yellow wax ... ..	12 gr.
Resin ... ..	2 "
Turpentine ... ..	1 oz.

Melt the wax and resin and add the turpentine. Rub a little of this on the glass all over, and then polish with a clean rag.

ICONOCLAST II.—Give your prints a dip in the chrome alum bath recommended by Mr. Wall in our correspondence columns a month or two back. For the Alpha plates the developer you are using is much too strong. Try the following:

Pyro ... ..	1 gr.
Carbonate of ammonia ... ..	13 "
Bromide of ammonia ... ..	1 "
Distilled water ... ..	1 oz.

To clear your fogged slides, try a gentle reducer of red prussiate of potash and hypo.

S. HOLDSTOCK.—(A) Shutter exposures can certainly be made on a dull day, but obviously the duller the light and the quicker the shutter, the more miserable the results. (B) The elliptical shutter gives about one-fifteenth of a second. (C) Black tones require very deep printing and the chloride of lime or the combined uranium and gold bath, both of which we give you:

(1).	
Chloride of gold ... ..	1 gr.
Common chalk ... ..	10 "
Chloride of lime ... ..	1 "
Distilled water ... ..	8 oz.

Mix, allow to stand twelve hours, and filter. The above will tone one sheet of paper.

(2).	
Chloride of gold ... ..	1 gr.
Uranium nitrate ... ..	1 "
Salt ... ..	15 "
Acetate of soda ... ..	15 "
Distilled water ... ..	8 oz.

Neutralise the gold and uranium with soda, add the other salts and water. (D) The ordinary ferrous oxalate, to every ounce of which 1 dr. of sulphurous acid has been added. (E) Your washing is hardly thorough. Place your plate in a dish, allow to soak for ten minutes, empty and refill; continue this for an hour. (F) The platinotype process, like everything else, wants learning, then it is by no means difficult. It is easier than many other processes because of the high price of platinum.

R. BONNELL.—You could get a camera obscura model finder from Lancaster, Underwood's or any of our advertisers, and a little brass catch at the top and side of camera would enable you to fix on and take off.

MARTIN.—If you block out A and C you ought then to be able to turn out good work, as you could light from either side, that is to say, the camera could be either near A or near C.

H. H. OORB.—A good blacking may be made by rubbing lamp-black or ivory black into a cream with japaner's gold size and adding a little turpentine. This will do for woodwork. For metal, grind a little lamp black up with ordinary hard varnish. You can obtain a good black varnish from Tylar's, Upson of Maidenhead, or Bate's black from almost any dealer.

MOORE.—Your fault lies in using a rapid plate. You should have used a slow transparency plate, such as is used for lantern slides. We have, in default of these, used an ordinary landscape plate, but prefer a lantern rapidity. Over-exposure should be avoided and a developer strong in pyro and bromide used.

J. B. (Havant).—(1) We should advise you to obtain a wide angle and medium angle rapid rectilinear and a narrow angle landscape lens. We should choose either Suter's rapid aplanat D No. 3 of 13 $\frac{1}{2}$  focus, and Suter's C lens No. 3 of 8 in. focus, or else Ross's new extra rapid symmetrical of 10 $\frac{1}{2}$  and the Suter C lens, and then Wray's narrow angle landscape lens, of 12 in. focus, and one of Swift's 16 in. focus landscape lenses. With these lenses there would be no subject you could not tackle. (2) We do not think there is much, if any, choice between the two makers. (3) The advantage of Ross's new lens is the large aperture,  $f/5.6$ . We had one of these for 10 by 8 to examine the other day, and it struck us as being as nearly perfect as it is possible to make a lens. (4) There is never a statement made but what some one will sneer at it. We always use single lenses, and certainly believe in their superiority, and frequently use them when perhaps an R.R. should be used.

E. S.—Edwards's Isochromatic plates are not specially sensitive to red, and therefore you cannot expect them to do an impossibility. Vogel's Azaline plates have a decided higher red sensitiveness and would probably do what you want. If you want real and decided red sensitiveness you must sensitise your own plates either with cyanine or preferably a bisulphite compound of cerulean blue. You can obtain just the effect you want by using at screen



which will cut off all but the red rays of light, and then afterwards exposing for the yellow, green and blue. You must not lose sight of the fact that you would have to develop your plate in total darkness were it very strongly red sensitive. We shall be pleased to help you further if we can.

W. H. CLARK.—Lens to hand. Report to follow.

G. M. S.—We will write you.

CORNWALL.—None of the lenses have been sold. WANTED, the address of Thistleton, a camera maker.

ATCH GEE.—We will try and supply an article upon the subject you mention, but Messrs. B. J. Edwards and Co., of Hackney, hold patents for the orthochromatising of plates and very jealously guard their rights.

R. B. SHAWCROSS.—Many thanks for your prints. WINZER AND Co. (Dresden).—The letter sent us has been forwarded to Mr. Winn.

ANXIOUS.—We can and shall be very pleased to test the lens for you, but under the circumstances it will be wiser for you to send it to the lens testing department of the Royal Society, Kew Observatory. You will then get a certificate which no maker can gainsay.

THOMAS BROTHERS.—Many thanks for the honour. When you are quite settled with you please send us further particulars for publication.

## Quarterly Examinations in Photography.

### QUESTIONS.

- Why are alkaline salts added to a toning bath, and explain the action of a toning bath?
  - Is it preferable to use a swing-back or moveable front to a camera? State reasons for answer.
  - What are the chief causes of fading in prints?
- (Latest Day for Answers—May 11th.)

### RULES.

- Answers must be received on the morning of the Monday week following the publication of the question.
  - All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.
  - A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.
  - Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.
  - Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.
- NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed to—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Safe and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Safe and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of

2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

N.B.—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," etc. — AMATEUR PHOTOGRAPHER, vols. vii. to xii; 17 "Reporters," vols. i, ii.; 12s. 6d.; exchange hand-camera, ether saturator, new, 21s., or offers.—Horth, Bath Street, Hereford.

About 250 numbers of AMATEUR PHOTOGRAPHER, from October, 1886; "Photography," from No. 9; "Photographic News," with index for 1887, several Journals, and others; state wants; what offers?—C. Naylor, Batley.

AMATEUR PHOTOGRAPHER, Nos. 181 to 222, forty-two numbers in all; what cash offers?—E. C. Brown, 368, Kingsland Road, N.E.

Backgrounds.—Two flatted oil backgrounds, 8 ft. by 6 ft., conservatory with palms, rustic arbour with creepers, handsome scenes, and well painted, new condition, and on rollers; 20s. each; 35s. the two.—Hill, Hampton Road, Twickenham.

Bicycle.—Cushion tyre diamond frame Safety, ball bearings throughout (pedals included), first-class machine, faultless condition, good make, beautifully nickel-plated, easy running machine, and good hill-climber; £7 17s. 6d.; genuine bargain; satisfaction certain; approval willingly.—Z., 34, Hill Street, Ipswich.

Cameras, etc.—Camera (by Hare), 7½ by 5½, five double slides, carriers for half and quarter plate, best make and finish, and in excellent condition, a bargain to anyone requiring a camera in which extreme portability is not of first importance.—Herbert Jones, Derby Terrace, Huyton, Liverpool.

Half-plate camera, three double slides, best quality, good as new; £1.—B., 1, Balfour Terrace, Mayes Road, Wood Green.

Watson's half-plate camera, three backs, etc., etc.; £3.—M. Dowell, Larkhill Terrace, Blackburn.

Lancaster's quarter-plate Instantograph camera, with all appendages; particulars given; offers.—R. Johnston, Abbotsholme, Rochester, Stafford.

Half-plate Sands and Hunter's Gem camera, three double backs, all brass-bound; list price £10 15s.; accept £8 5s.; new. This low price should attract the attention of those requiring a first-class set.—6, Montford Place, Kennington Green.

Cameras, Lenses, etc.—Quarter-plate Lancaster's Instanto, with superior rectilinear lens, two double backs, and stand, complete, 25s.; very superior dark box for 7 by 5 plates, 2s. 6d.; strong lead-lined developing sink, cost 20s., price 10s.—J. D. Pearson, Chilwell, Notts.

Lancaster's half-plate Instantograph camera, 3 double dark-slides, tripod, lens with instantaneous shutter, offers? Ross' half-plate portable symmetrical lens, 55s.—R. Hitchens, 34, Longcross Place, Cardiff.

Half-plate Lancaster's 1891 Instantograph camera, dark-slide, tripod, fitted rapid rectilinear lens, as new, for 70s.—2, Hawthorn Villas, Slad Road, Stroud, Glos.

Lancaster's Instantograph camera, combination Rectigraph lens, Chronolux shutter, Universal stand, three dark-slides, etc., cheap; exchange good hand-camera.—Copeman, Hensbridge.

Quarter-plate Instantograph special 1891, brass-bound, three double dark-slides, Taylor, Hobson R.K. lens, and lock-up case, perfect condition; cost £5; sell 70s.—No. 147, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Watson's half-plate Acme camera, three double backs, turntable in base, £7 (list price £10 17s.); solid leather case for ditto, 17s.; Optimus R.E. lens to cover 7 by 5, 35s.; Thornton-Pickard shutter to fit same, 17s.; Wray's W.A. landscape lens, 10 by 8, 50s.; Ferrero's half-plate film-holder (carries 24 celluloids), to fit above camera, 35s., all perfect; also quarter-plate hand-camera, with splendid R.E. lens, 6 in. focus, rotating stops, two finders, focussing screen, six double backs (made to order by Thistleton), focussing by engraved scale, altering stops or shutter-speed, all done from outside, useable on tripod, cost over £12, offered for £3 15s., thoroughly efficient.—Davis, 87, Church Road, Richmond, Surrey.

Half-plate camera, latest improvements, three double slides, 7 by 5 rapid rectilinear, and Thornton-Pickard time and instantaneous shutter, with tripod and black hand-bag for same, all new last season; £6 10s. lowest.—H. C., 6, Gloucester Road, South Hackney, N.E.

Lancaster's half-plate Instantograph, splendid lens, double back, and tripod, complete; 52s. 6d.—W. Taylor, 23, Havelock Street, West Hartlepool.

Quarter-plate International camera, lens, tripod, four double backs; £2 cash, or exchange. See hand-cameras wanted.—Kosslyn, Bray, Co. Wicklow.

Lancaster's quarter-plate Instantograph, Wray's 5 by 4 rapid rectilinear lens (new), Kershaw's shutter, view finder, tripod, printing accessories, etc.; £3 3s.—R. Ballard, 86, Bartholomew's Hospital.

Half-plate rectilinear lens, with stops, perfect condition, £2; pair Dallmeyer's stereo lenses, camera, slides, etc.; No. 1 Dallmeyer's triple, what offers?—Bromhead, 1, Regent Street, Clifton.

Half-plate camera, with lens, stand, two double backs, and focussing cloth, complete, only 25s., satisfactory work can be shown; canvas bag for above, 3s. 6d.—Keeling, 16, Everleigh Street, Tooting Park, N.

Lancaster's 1891 half-plate Instantograph, slide, tripod, and Optimus R.K. lens, as new; bargain, 88s.—93, Slad Road, Stroud.

Whole-plate Stereoscopic Co.'s best light camera, every movement, three double backs, Optimus 9 by 7 R.S. and W.A. lenses, pneumatic shutter, focussing cloth, tripod, solid leather case, equal new; cost £28 10s. 6d.; price £17 10s.—Bygrave, 15, Canterbury Road, Brixton, S.W.

Camera, full-plate, best quality extension, for sale, fitted with every convenient appliance, two lenses (Ross), four double dark-slides, carriers, Eastman's frames, tripod, in two portable strong leather bags, instantaneous shutter, and complete outfit, with dishes, printing frames, lamp, etc. Half-plate ditto, London Stereoscopic Co.'s best make extension and outfit. Owner will initiate, by correspondence, any purchaser unacquainted with photography into its rudimentary mysteries.—Apply, Executor, Florence Villa, Portsmouth, Southampton.

Dark Boxes.—What offers in rabbits for splendid collapsible dark box, for developing under 4 lbs., in splendid condition?—H. Price, Stag, East Finchley.

Hand-Cameras, etc.—No. 1 Kodak, with leather case, quite perfect, loaded with 100 exposures; price £2 15s.—R. Seymour Benson, Stockton-on-Tees.

Griffiths' Guinea camera, as new; 14s.; or exchange.—Arthur Baird, 22, Strickland Street, Newcastle-on-Tyne.

Hand-camera, focussing screen, three double slides, Optimus rectilinear lens, Kershaw shutter; exchange Euryscope half-plate lens, camera, or offers.—Vicary, Grocer, 32, Bloomfield Street, Dalton, N.E.

Nos. 1 and 2 Demon defective cameras, with dark bags and ruby lamp; 13s. the lot.—R. F., 11, Shepherd's Place Buildings, Mayfair, London.

Cash wanted; defective camera, complete, 4s. 6d. post free, cheap.—Wainwright, Grocer, Castleford.

Will exchange Facile camera for 9 by 7 Optimus rectilinear lens; whole-plate camera wanted for cash.—Lofthouse, Holmedale Terrace, Harrogate.

Lenses, etc.—For sale, a good portrait and enlarging lens (by Cox); 30s.—J. A. Benham, Goring-on-Thames.

12 by 10 Optimus rapid rectilinear, quite new, capital instrument; offered for £5 10s.—O., 101, Queen Street, Exeter.

For sale or exchange, Grubb's 5 by 4 portrait lens, cost £3, price 70s.; also Shepherd's half portrait lens, on approval; deposit.—Sykes Crowther, Pudsey, Leeds.

Ross' No. 3 portrait lens; cost £17 10s.; price £10; good quarter-plate hand-camera accepted in part exchange.—Ethelbert Henry, Alveston, Derby.

Lens, rectilinear, 7 by 5, covers grand to edges, hood, stops f/8 to f/32; 25s.; approval.—Adams, Hermitage Mews, Stamford Hill.

Ross' whole-plate portable symmetrical lens, very little used; £4.—T. Blackshaw, Strawberry Bank, Blackburn.

Two first-class rapid rectilinears, Waterhouse stops, quite new, perfect definition; quarter-plate, 17s. 6d.; half-plate, 23s. 6d.; approval.—M., 73, West Clowes Street, Salford.

Ross' No. 5 portable symmetrical, 70s., new last season.—H., 55, Val Palsant, Jersey.

Optimus R.K. lens, splendid definition, 6 by 5, new; cost 45s.; post free on receipt of 33s.—102, Shaftesbury Road, London, N.

Optimus rapid rectilinear, 5 by 4, quite new, 25s.; Ross' 4 in. portable symmetrical, 3s.; first cash accepted.—Rev. J. Henning, Kingsbridge, Devon.

10 by 8 rectilinear, cheap for 30s., no cap; whole-plate view and group lens, 15s.; Decoudan's photometer, new, 5s.; home-made whole and half plate bellows cameras, rack and pinion, cheap.—Holloway, 215, St. James's Road, Bermondsey.

7 by 5 Optimus rapid rectilinear, perfect, no fault, 35s., makers' price 49s. 6d.; excellent half-plate lens, with instantaneous shutter, 22s.; half-plate wide-angle, 11s.; 10 by 8 lens, 2s.; quarter-plate camera slide and stand, 10s.—Robert Dixon, Branganza, Wandsworth Common.

Half-plate R.K. Laverne, Waterhouse stops f/8 to



f/64, fine definition, covers plate well to edges, negative and print taken with f/8 can be seen; worth 20s.; take 25s.; as new, approval.—Dudin, 4, Fenchurch Street, London.

Whole-plate rapid rectilinear lens, f/8; bargain, 35s.—14, George Street, Stroud, Glos.

**SETS.**—Lancaster's quarter-plate outfit, nearly new, 30s.; induction coil, 2 in. spark, commutator, vacuum tubes, brass model engine and boiler; offers. 180, Heyside, Royton.

A gentleman giving up photography wishes to dispose of his complete set, consisting of Meagher's whole-plate camera, Ross' R.R. lens, fitted with Newman's shutter and iris diaphragm, three cases, nine printing frames, two lamps, retouching desk, dishes, and every requisite for photography, excellent condition; cost over £40; will sell for £22; seen by appointment.—No. 146, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Half-plate photographic outfit, equal to new, by good maker, and comprising Tourists' camera, with three double backs, three lenses (each with instantaneous shutter), cowhide bag, and shoulder strap, ash tripod and case, and all the sundry articles required in an amateur's outfit; full printed descriptive list on application.—Thomas M. Woodhead, 27, Forster Square, Bradford.

**SHUTTERS.**—New repeating shutter, for instantaneous or prolonged exposures, no setting required, fitted with pneumatic release; 18s.—Meadway, Vestry Hall, Bethnal Green.

**STUDIO.**—Studio (wooden), 20 ft. by 9 ft. 6 in., lighted for portraits both ends, on the best and most modern principles, with dark-room attached, 8 ft. by 4 ft., built in portions and bolted together, roof covered with linoleum, perfectly watertight, nearly new; price £10; owner leaving.—Whitehead, Photographer, Carleton, Skipton.

**SUNDRIES.**—Complete plant and appliances for colotype, nearly new; price £10 10s.—Apply Colotype, care of AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

On sale, cases for complete half and quarter plate

outfits; 9s. and 5s. each, carriage paid. — 4, Eaton Street, Hanley.

Remington carbine and sword bayonet, in perfect condition, captured during Egyptian war; what offers? Whole-plate single lens wanted.—Ethelbert Henry, Alvaston, De by.

Tylar's half view-finder, unused; 4s.; cost 7s. 6d. — F. Poste, Halleybury, Hertford.

Houghton's changing tent, 18s.; Eastman's half-plate roll-holder, with transparent film, £2; Newman's patent shutter, £1; Shew's detective case, for their quarter-plate hand-camera, 12s.; six dozen quarter-plates, Paget's, and Elliott and Son's, 3s.—W. Pratt, 27, Regent Street, Nottingham.

Microscope object glass (Wray's 1-10, with adjustment), in case, new; 50s.; bargain.—R. H. Wilson, Chemist, Kirkcaldy, N.B.

Spratt's patent rabbit hutch, new, four compartments, cost 90s., also five good Belgian hares, offered in exchange for photographic apparatus or optical lantern — E. Jewitt, Matlock.

Background, painted, 10s.; head and body rest, £1; burnisher, 8 in., Vevers' lamp, 9s. 6d.; 1000 each of cabinet, c.d.v., designed tissues, 3s. 6d.—Smith, jun., 76, High Street, Wavertree.

**TRIPOD.**—Whole-plate folding tripod (by Wratten and Wainwright), equal to new, cost 28s., price 10s.; also light quarter-plate tripod, 5s. 6d. — E. Jewitt, Matlock.

### WANTED.

**Cameras, etc.**—Lancaster's half-plate instantaneous camera, double backs, and tripod, without lens.—A. C., 33, Stroma Terrace, Seven Sisters' Road, Tottenham.

7½ by 5 camera, Acme, Beck's, or McKellen's preferred.—Herbert Percy, Harbour Office, Penzance.

**Cameras, Lenses, etc.**—Waterproof case for 7½ by 5 square camera, lens, three slides, also tripod; must be good and cheap; full description; approval.—Amateur, Milford Hall, South Milford, Yorkshire.

Good half-plate camera, rectilinear lens, stand, and double back, all modern type, with latest im-

provements; about four guineas. — No. 137, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Half-plate camera, rapid rectilinear lens, and sundries, must be good and cheap, cash; full particulars.—Frith, 53, Sayer Street, New Kent Road.

**Hand Cameras, etc.**—No. 3 Kodak, junior, must be perfect and loaded.—R. Seymour Benson, Stockton-on-Tees.

Hand-camera, cheap for cash; specimen print.—T. 39, Isledon Road, London, N.

Hand camera, Ideal, or Swinden and Earp's, in perfect order, state lowest cash price, or cash and International quarter-plate set, four double backs; deposit; approval.—Rosslyn Bray, co. Wicklow.

To hire for fortnight, Swinden's or other good quarter hand-camera, R.R. lens. — Samuel Wells, Goole.

Kodak, No. 3, in exchange for half-plate stereo set, complete.—Ethelbert Henry, Alvaston, Derby.

**Lantern.**—Oil lantern, in good condition, with or without lens.—Ingram, 21, Drummond Street, Wolverhampton.

Magic lantern, good; state particulars and price.—4, Eaton Street, Hanley.

Enlarging lantern, in good condition, state price and maker; half-plate double dark wood slides, same size as Tylar's metal. — No. 145, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Lenses, etc.**—A Dallmeyer's rapid landscape long-focus lens, 10 by 8 or 6½ by 8½, or a wide-angle landscape lens, same size and same make.—F. C. Barton, Saffron Walden.

Pair stereo lenses; exchange enlarging lantern.—Young, 2, Royal Terrace, Paisley.

**Shutter, etc.**—A time and instantaneous shutter and leather or canvas case for half-plate camera, etc., must be in good condition and cheap. — P. R. Thomason, 14, Jesus Lane, Cambridge.

Shutter for 2½ in. hood, Thornton-Pickard or Ker-shaw preferred; also half-plate Eastman's roll-holder, must be in good condition and cheap for cash.—A. Spiller, Hillside, Hampstead Hill Gardens, N.W.

### NOTICES TO SUBSCRIBERS.

*Subscriptions must be prepaid.*

UNITED KINGDOM.....	Six Months, 5s. 6d.....	Twelve Months, 10s. 10d.
POSTAL UNION .....	6s. 6d.....	12s. 0d.
INDIA, CHINA, ETC. ....	7s. 6d.....	12s. 8d.

### NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.**—Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

### E. G. PLATT,

Brass Finisher, Optical Lantern, Bellows, & Tent Manufacturer,  
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Three Minutes from Dalston Junction, N.L.R. Write for Catalogue.

## "AMATEUR PHOTOGRAPHER" PUBLIC SCHOOLS COMPETITION. OPEN TO BOYS UNDER SEVENTEEN YEARS OF AGE.

- Class I. Landscape. "Amateur Photographer" Silver and Bronze Medals.  
II. Portraits, including Groups " " "  
III. Animals " " "  
IV. Architecture " " "

**NOTE.**—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date June 17th.

## "AMATEUR PHOTOGRAPHER" Ladies' Second Photographic Competition

### PRIZES.

FIRST PRIZE.	SECOND PRIZE.	THIRD PRIZE.
GOLD MEDAL.	SILVER MEDAL.	BRONZE MEDAL.

(These Medals, of the smaller series, will be appropriately mounted as Brooches or Pendants if desired).

**SUBJECTS:** Landscape or Seascape—Landscape with Figure—  
Portraiture or Figure Study.

**NOTE.**—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date August 22nd.

## CROUCH'S LENSES

or Landscape, Interiors, Stereoscopic Work, or for any special requirement, Trade, Professional, or Amateur.

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# THE AMATEUR PHOTOGRAPHER

Telephone No. 1645      Telegraphic Address: VINEY, LONDON      Office: 1, Greef Lane, Ludgate Hill, London, E.C.

No. 344. Vol. XIII.]

FRIDAY, MAY 8, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature"—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.*

**OUR VIEWS.**—Monthly Competition, No. 24, "River Scenery"—Photographic Exhibition at Leeds—The Exhibition at Vienna—The Financial Result of the Liverpool Exhibition—The Hackney Society—The Postmaster-General and the AMATEUR PHOTOGRAPHER—The Challenge Cup and the Crystal Palace Exhibition—Prospective Programme of the Photographic Convention of the United Kingdom—Wanted a Society at Streatham—Mr. W. Lamond Howie writes us about the Competitions—Dark-Rooms—The "Tourist's Index"—The Oldham Society—The *Pall Mall Gazette* upon the AMATEUR PHOTOGRAPHER—"Public Schools' Competition"—The New Gallery—The Camera Club Soirée.

**LEADER.**—Home Portraiture.

**LETTERS.**—What is an Amateur? (F. S. James; G. H. P. Burne; Leslie Selby; James Wood; S. Francis Clarke; W. H. Whittard)—Explosion of a Regulator on an Oxygen Gas Cylinder (C. Goodwin Norton)—Distinguishing Colours (X. Y. Z.)—What is Meant by the Term Instantaneous as applied to Photography? (W. B. MacCabe)—Society for Streatham (Reginald C. Gould)—The Exhibition at Brixton (F. W. Levett).

**COMMUNICATED ARTICLES.**—Composition, and Light and Shade, illustrated (Robinson)—Instantaneous Photography, illustrated (Harrison)—Photographic References (Nott).

**NOTES.**—Thursday Evenings at the Camera Club—Edinburgh—Paris—Liverpool—The "Practical Photographer's" Federation.

**THE PICTURE GALLERIES.**—New Gallery Summer Exhibition.

**AMATEUR PHOTOGRAPHER'S List of Dark Rooms.**

**SOCIETIES' MEETINGS.**—Bath—Barnow-in-Furness—Belfast—Birkenhead—Brighton—Brixton and Clapham—Burnley—Croydon Micro.—Dublin Y.M.C.A.—Holborn—Lantern—Liverpool—Loughboro'—North Kent—Phot. Soc.—Richmond—Royal Society—Stockton—West London.

We have the pleasure to announce the prize winners in the AMATEUR PHOTOGRAPHER Monthly Competition No. 24, "River Scenery." The photographs contributed are about sixty; many of them are only of moderate merit, but some are quite up to exhibition standard.

*First Prize (Silver Medal).*

ED. B. WAIN .. .. Norton-in-the-Moors.

The contribution is a delightful view of Goring on the Thames, and is titled "The Bend of the River," taken in May last year, at 4.30 p.m., with an R.R. lens, working at *f*/16, one second exposure. The print, which is on bromide paper, is really perfect. It was exposed for 45 seconds, 2 feet from a paraffin lamp, developed with eikonogen, and squeezed on to a piece of matt-surface celluloid. No one who sees this print can say a word against the use of bromide paper.

*Second Prize (Bronze Medal).*

T. GLAZEBROOK .. .. Ashton-under-Lyne.

This competitor takes second prize for a well-selected picture, "A Breezy Afternoon" (Bolton Woods). It is a good photo-

graph, carefully treated, but with clouds printed in which are rather heavy for the subject. The distance is lost by the heavy clouds printed over it. It was taken in bright light, with a lens working at *f*/32, half a second exposure being given at 1 p.m. on the 6th of September.

Other photographs calling for special attention are contributed by J. Harriman, "A Double-reefed Mainsail on Henley Reach;" A. James, "The Ford;" J. A. Booth, "Marlow Bridge;" E. R. Ashton, "Horning Ferry;" W. G. Perry, "On the River Onny;" T. Johnston English, M.D., "Whitby Harbour." These photographs will be reproduced, and all the others criticised, in the next issue of the *Photographic Reporter*.

We may add that it is not our intention in future criticisms to publish the name of the maker of either the lens or plate used, but we shall be pleased to supply that information to any of our subscribers when desired.

We understand that it is proposed to hold a photographic exhibition at Leeds. Last week a deputation from the Leeds Photographic Society, consisting of the President, Mr. Godfrey Bingley, Mr. C. H. Bothamley, and Mr. Branson, waited upon the Committee who have the management of the Fine Art Gallery, and in consequence of the representations made, they determined to recommend the General Committee to promote a photographic exhibition, to be opened some time towards the end of November or the beginning of December.

The photographic exhibition promoted by the Club of Amateur Photographers in Vienna was opened with considerable ceremony on Monday last by the Archduchess Maria Theresa. At present we have no report to hand of the photographs exhibited, but rumour says only 600 photographs were selected for the Exhibition out of 4,000 sent in. Rumour also has it that H.R.H. the Princess of Wales is an exhibitor. Amongst other exhibitors from England, we understand, are Messrs. Lyonel Clark, George Davison, J. Gale, and Alfred Maskell.

From the report sent us of the last meeting of the members of the Liverpool Amateur Photographic Association, we understand that although the expenses of the late exhibition have been very heavy, it is confidently expected that the Exhibition Committee will be able to hand over the handsome sum of £250 to the Treasurer of the Association.

The Hackney Photographic Society show a good year's work in their annual report which has just been published.



The Society has a considerable number of members, many of them very active workers, and in Mr. W. Fenton Jones they are fortunate in having an Hon. Secretary who works well with everyone.

It is difficult to understand why the Postmaster-General should take such a lively interest in class journals. At the present time he is troubled because the line, "The largest circulation of any photographic paper in the world," is printed at the top of the front page of the AMATEUR PHOTOGRAPHER. We may place it at the bottom but not at the top. The following is a rather smart paragraph upon the matter which appeared in an evening paper this week:—

"The Postmaster-General is progressing. His motto is *Festina lente*. For more than two years we learn that the AMATEUR PHOTOGRAPHER has had inscribed upon its wrapper the following statement: 'The largest circulation of any photographic paper in the world.' For two years Mr. Raikes has allowed this iniquity to be perpetrated, but now, like the villain in the Adelphi drama, he exclaims, 'Ha! Ha! Never again.' The proprietors of this useful magazine have been politely informed that such a statement is against the regulations of the Post Office. If this statement continues to be printed on the innocent blue wrapper of the AMATEUR PHOTOGRAPHER, it will be charged increased postal rates."

In our comments upon the "Challenge Cup" Competition at the Crystal Palace, it was stated that there was "only one individual prize taken in the Birmingham Society." This we find to have been incorrect, the members of the Society who were awarded prizes for their exhibits were Messrs. John Collier, B. Karleese, and J. H. Pickard. We very cordially make this correction, and at the same time have pleasure in expressing our high admiration of the exhibit of the Birmingham Photographic Society.

MANY of our readers will remember that it was determined to hold the next meeting of the members of the Photographic Convention of the United Kingdom at Bath. Through the kind courtesy of Mr. J. J. Briginshaw, the Hon. Secretary and Treasurer, we are able to give the following outline of the arrangements for the Convention week, over which Mr. W. Bedford will preside:—

- July 6th.—Reception and Presidential Address.
- " 7th.—Excursion to Chepstow and Tintern.
- " 8th.—General Meeting. Meeting of General Committee, Convention Group. Papers from 3 p.m. to 6 p.m., and 8 p.m. to 10 p.m.: "The Photographic Work of Herschel and Fox Talbot," with illustrations, W. Lang, jun., F.C.S.; "Recent Developments in Printing Processes," with illustrations, C. H. Bothamley, F.I.C.; "Recent Astronomical Photography," A. A. Common, F.R.S.
- " 9th.—Day, Excursion to Salisbury; ditto, Bristol and Clifton. Evening, "Report of the Lens Standards Committee," and "Discussion on Proposed International Standards," opened by L. Warnerke.
- " 10th.—Day, Excursion to Glastonbury and Wells; ditto, Corsham and Laycock Abbey. Evening, Dinner and Smoking Concert (ticket 5s.)
- " 11th.—Council Meeting.

Permission to photograph in the places over which they have control have been granted by the Bishop of Bath and Wells, the Dean of Wells, the Dean of Salisbury, the Dean of Bristol, the Rev. C. E. Cornish (St. Mary Redcliffe), and C. H. Talbot, Esq.

The Bath Photographic Society will place their meeting-room and dark-room at the service of the Convention.

The White Lion Hotel and the Royal Hotel will be the Convention head-quarters during the meeting.

Given fine weather, the members of the Convention and their friends are likely to have a glorious week. The neighbourhood of Bath is so picturesque, the scenery and places of interest are so varied, that there will be many photographic remembrances of a week spent in the city. The Bath Photographic Society will, we are sure, help the visitors, and in the Council of the Society, and amongst the

members will be found many enthusiastic and ardent workers who will gladly welcome their brother craftsmen from afar.

WE publish in another column a letter suggesting the formation of a photographic society at Streatham. There are, to our own knowledge, several first-class workers living in the district, and we should say that Mr. Gould will have ample support.

Mr. W. LAMOND HOWIE, the winner of the Second Prize in the AMATEUR PHOTOGRAPHER Lantern Slide Competition No. 4, writes: "I am very pleased to have reached the point of public recognition with my photographs, and hope, now that I have got a foot on the ladder, to keep rising. Thanking you for these and other competitions you have inaugurated, which, besides enabling us amateurs to measure ourselves, certainly prove an incentive to ever improving work."

SOME few complaints have reached us from owners of "dark-rooms" as to the manner in which some of those who have been introduced by us have left the apparatus, etc., placed at their disposal. This is inexcusable and much to be regretted. We shall be glad if those of our subscribers who avail themselves of the privileges extended to them will conduct their photographic operations in a stranger's dark-room with the same care that they would expect a stranger to use in their own room. This year we have not included in our "List of Dark-rooms" the hotels named in the "Cyclists' Touring Guide," but we shall be pleased to add the name of any hotel which has a dark-room to our list, and shall be particularly obliged if subscribers to the AMATEUR PHOTOGRAPHER who in the course of their travels put up at hotels where there are dark-rooms, will kindly notify the fact to us, and we will at once communicate with the proprietors.

WE had quite hoped to have published the full list of references to back numbers of the AMATEUR PHOTOGRAPHER which contain items of interest to the tourist-photographer, such as articles, or letters on "Holiday Resorts and Photographic Haunts," or Answers to Queries which have appeared from time to time, but we found the work to be so heavy that it was impossible to have the "Tourist's Index" ready for this issue.

THE Hon. Secretary of the Oldham Photographic Society has sent us a card of the Society's "Rambles" for 1891, which commence on the 10th of May, and continue at frequent intervals till the 22nd of August. The card is embellished with a beautiful portrait of the President, Mr. T. Heywood, with reproductions of, we presume, some of his latest photographic work. This is not the first photographic souvenir the Oldham Society have distributed to their members.

WE were pleased to note the following paragraph in the *Pall Mall Gazette* of the 4th inst.:—

"Photography is becoming popular also among schoolboys, 'who are very like politicians, after all.' We hear of a competition, organised by the AMATEUR PHOTOGRAPHER, open to boys under seventeen years of age. There will be four classes in this competition—landscape, portraits, animals, and architecture. Silver and bronze medals will be the prizes in this 'Public Schools Competition.' Doubtless a change will come o'er the colour of the dream of 'the whining schoolboy, with his satchel and shining morning face,' with these inducements to photographic fame."



A SUNNY afternoon was an additional attraction for "everybody who is anybody" to throng the marble vestibule of the New Gallery at the private view last week. Passing through the Central Hall, "where the silver fountain falleth," one saw Mrs. Oscar Wilde, Lady Coleridge (accompanied by the "Lord Chief"), Mrs. Bernard Beere in pale grey silk, Lady Colin Campbell, Miss Dorothy Dene, looking unruffled by her legal contest with her dressmaker, and Mrs. Comyns Carr, in a shot-silk costume of violet and green. There was quite a crowd of artists, including Mr. Shannon, whose pictures attracted much notice, Mr. G. H. Boughton, A.R.A., Mr. Val Prinsep, A.R.A., Mr. Ernest Waterlow, A.R.A., Mr. John Brett, A.R.A., and Mr. J. MacWhirter, A.R.A. "Literary gents" were present in the persons of Mr. Geo. Augustus Sala, Mr. Henry James, who is a faithful "private viewer," Mr. Lecky, and Mr. Norman McColl (of the *Athenæum*). Some M.P.s looked in for a little while, including Mr. John Aird, whose art treasures are described in this month's *Art Journal*, Sir Edward J. Reed, K.C.B., M.P., whose son's drawings are shown in the balcony, and Sir A. K. Rollit, M.P. Mrs. John Wood, the popular actress, went carefully round the rooms, and other representatives of the drama were Mr. Hare and Mr. Corney Grain, whom one does not see at picture galleries. Of course, some of the gowns were charming, and few could be considered as lacking in good taste. A lady in apple-green satin attracted almost as much attention as Mr. Burne-Jones' picture, round which there was always an admiring crowd.

THE Camera Club soirées is announced to be held at the Club House on Monday, the 25th inst., at 8 p.m. The house will be thrown open to visitors, and many will doubtless accept the hospitality of the Club. From the Club Journal we take the following paragraph:—

"The function will be a special celebration of the completion of the premises fit for inspection and general comfort. The programme of the evening will consist of a musical entertainment, with a lantern exhibition in the Club-room, and a show of turning and other amateur mechanical work by members in the lathe-room. Other minor attractions will also be added, including stereoscopes and microscopes, and, if possible, the phonograph, which will be placed in the library. All the rooms will be on show, from the studio to the basement laboratories. Ladies are invited to the soirée, but as the large room will not accommodate an unlimited attendance, the number of visitors will have to be restricted. Admission for invited visitors will be strictly by ticket. Members will, of course, not require tickets. Owing, therefore, to the limited accommodation referred to, not more than 150 visitors' tickets can be issued. These will all be for ladies, and each member applying before the limit is reached, will be entitled to one lady's ticket."

We understand that the present exhibition of photographs (members' work) is open to the public on presentation of visiting card, and that the Club servants have instructions to show gentlemen over the house. All the appointments of the Club are most complete. More members are wanted, and we should strongly advise those who are interested in photography and photographic matters to join the Camera Club. Country and foreign members have now very distinct advantages—a splendid club house, with the best photographic library in the world, most admirably arranged dark-rooms, enlarging room, studios, workshops, etc., dining-room, billiard-room, access to all the photographic journals, and the opportunity of meeting and discussing with the most prominent workers in photography. The Club is most conveniently situated in the very heart of the West End, and is, therefore, in every sense a rendezvous for the provincial worker in photography, which will serve his purpose from the art, practical, or social side of photography. We venture to say that no other art or science has raised for itself in so short a space of time such an

institution as the Camera Club, which now numbers more than 700 members.

### HOME PORTRAITURE.

By request from several of our readers we break the continuity of our notes on the above, and now treat of the development of the plates.

The main point for which all our notes have been contending, and which we must not lose sight of in development, is reduction of contrast and the production of soft, harmonious negatives. There are practically four developing agents open to us—ferrous oxalate, our old and dirty friend pyro, hydroquinone, and, lastly, the new comer, eikonogen. Few of us use ferrous oxalate now, and we shall not waste time in considering it, so we have only the three left. We shall now make a statement which will doubtless be received very variously by our readers, and that is *that hydroquinone is utterly unsuitable for developing home portraiture negatives*. We will now proceed to give our reasons for making this statement. In the first place we have a tendency in the lighting to exaggeration of contrast; secondly, hydroquinone has a tendency to give excessively dense high lights and glassy shadows; thirdly, not one amateur out of a hundred of those using hydroquinone knows how to use it. These statements are made not without due deliberation, and are the result of many months' personal work, and also of seeing a great number of portraits by our various correspondents developed with hydroquinone, and it has almost become a bye-word in the criticism of prints by us, "Oh, another hydroquinone monstrosity!" and this without seeing any data as to development. It must be clearly understood we do not state that hydroquinone cannot be used for this work, only that it requires a great deal more experience and a great deal more "brain" than is generally supposed. Hydroquinone development is the most difficult to learn, the most difficult to control, and is of value only to the expert hand.

Pyro is, and has been, the mainstay of portraitists for many a day, and the best formula to use we consider a plain pyro and ammonia developer, compounded on the lines of Edwards's well-known glycerine developer, which is noted for giving soft, delicate results. The following is the actual formula we use:—

	(A.)	
Pyrogallol . . . . .	1 oz., or 437.5 gr.	
Citric acid . . . . .	40 "	
Glycerine . . . . .	1 oz.	
Methylated spirit . . . . .	to make 9 oz. 1 dram.	
	(B.)	
Liq. ammon. fort '880 . . . . .	1 oz.	
Distilled water . . . . .	to 10 "	
	(C.)	
Ammonium bromide . . . . .	48 gr.	
Distilled water . . . . .	to 1 oz.	

(All these are 10 per cent. solutions.)

To make the developer, take 1 gr. of pyro = 10 minims of A, 2 minims of ammonia = 20 minims of B,  $\frac{1}{2}$  gr. of bromide = 5 minims of C, 1 oz. of water. One ounce of developer is sufficient for a quarter-plate, two ounces for a half-plate. Do not use slow development. Mix the whole of the developer in a cup or measure, and flood the plate with it at once. Do not wet your plates first. Rock your dish. If after developing some little time the high lights are dense but the shadows weak, pour off your developer, fill the dish with water, put it on one side with a cover over it for half an hour, and do something else. Never forget that *increase of pyro and bromide means increase of contrast*, lessening of pyro and bromide and increase of ammonia means decrease



of contrast. Do not use soda or potash for the accelerator, but if this is actually preferred, use the following:—

Carbonate of sodium (pure)	..	..	1,200 gr.
Caustic potash	..	..	150 "
Distilled water	..	..	to 10 oz.

Use one drachm of this to every ounce of developer. Use as little sulphite as possible.

Eikonogen is *par excellence* the developer for amateur portraiture work, and one of the simplest and one of the best one-solution formulæ is that of Warnerke:—

Sodium sulphite	..	..	40 parts
Hot distilled water	..	..	100 "
Eikonogen	..	..	10 "
Caustic potash	..	..	10 "

For use, mix 1 part of this with 9 or 10 parts of water.

Another formula, and one that we prefer, is the following by Dr. J. J. Acworth:—

(A.)			
Eikonogen	..	..	5 parts
Sodium sulphite	..	..	10 "
Distilled water	..	..	100 "

(B.)			
Caustic potash	..	..	5 parts
Distilled water	..	..	100 "

Mix in equal parts. This gives beautifully soft images without any sign of hardness.

Another formula we have used with good results is the combined "hydro cum eiko" of Mr. Chapman, of Manchester:—

(A.)			
Hydroquinone	..	..	40 gr.
Eikonogen	..	..	120 "
Sodium sulphite	..	..	480 "
Citric acid	..	..	20 "
Distilled water	..	..	20 oz.

(B.)			
Potassium bromide	..	..	5 gr.
Sodium carbonate (pure)	..	..	60 "
Sodium hydrate	..	..	30 "
Distilled water	..	..	20 "

For use, mix in equal parts.

Just a few brief tips and we have done. Always attend to the temperature of your developer. This should be 60 degs. F. Always use the acid fixing bath. Do not try for clear glass negatives, or black and white ones. Wash your negatives well, dry, and take a print from them before you decide to reduce, intensify, or otherwise fake or dodge them. Few can say what a negative requires doing to it by looking at it. Nearly everyone can tell from a toned and fixed proof though.

## Letters to the Editor.

### WHAT IS AN AMATEUR?

SIR,—The question "Amateur or professional?" has been often termed a "vexed" one in your columns. It was, however, after a flood of correspondence, settled some years ago, if I rightly remember, by yourself.

Of course, it is natural that beginners should wish to know public opinion on the matter, and a fair answer to a fair question can readily be granted. I must, however, take exception to your correspondent, when he asks, "Can these exhibitors any longer be considered amateurs, if they were so before?" I consider the doubt implied detracts from the candour of the question. It is not pleasant for myself and the other exhibitors mentioned to have their honour doubted, and the question mooted whether we had not tried to climb in the back way of the fold, and were not thieves and robbers. I suppose "An Inquirer" argued, "If they do such things publicly, what must their private actions be?"

It never occurred to me to hesitate over pricing my photographs, any more than it would have occurred to me to hesitate over pricing a horse or a pigeon sent for exhibition lest people should designate me a horse dealer or a bird fancier. Pricing one's exhibits I always considered a sort of form; when people did not wish to sell, I suppose they put fabulous prices, rather than none.

In the case of my Crystal Palace exhibit, I frankly confess I named a reasonable price to avoid paying for its return, as I can, of course, get any number of copies from my negative at a nominal cost. In a word, did not price my photographs to butter my bread—photography is not my profession—how then can I be a professional?—Yours, etc.,  
F. S. JAMES.

SIR,—The vexed and vexing question, "What is an Amateur?" has come down upon us again with periodical exactness, like the influenza, and, like that unpleasant epidemic, will probably remain an unsolved problem, notwithstanding the host of learned men and empirics who will doubtless endeavour to diagnose its symptoms and explain its characteristics.

My own idea of the distinction between a professional and an amateur, which I would not venture to advance were I not one of those "named" in the letter of "An Inquirer," is this: A professional photographer is one who produces photographs *in order to sell them*, while an amateur is one who *doesn't*, even though he should ultimately offer his wares for sale. If he prints photographs to order, and charges for them, even though it be only among his friends, I admit that he is sailing very near the wind, but if he sells what he has printed for himself but no longer wants, I think he may do so without question, just as, in the same way, if I build a boat for myself, and subsequently sell it, no one would call me a professional boatbuilder, but if I built it for sale they might.

As to the photographs exhibited by me at the Crystal Palace, they were all half-plate bromide prints, whose intrinsic value (including frames) was about 1s. 3d. each, while the price at which they were "offered for sale" was from £1 to £5. I think that the inference is obvious; nevertheless if "An Inquirer" would like to purchase them I do not mind letting him have them, even though I must henceforth consider myself a "professional"—for, *mirabile dictu!* they are still unsold!—Yours, etc.,  
May 3rd, 1891.  
G. H. P. BURNE.

SIR,—I notice in your last issue that some person who is too modest to sign his name, wishes to make out that I am no longer an amateur photographer. Perhaps he or she will allow me to differ with him or her on this point, although it is quite immaterial to me what "Inquirer" thinks on the matter. He says he *began* to investigate further. If he had *finished* his investigations, he would, perhaps, have altered the list of names he sent to you. However, I see that in the *latest* catalogue I am credited with a picture called "Lynton and Lynmouth," price 4s., which does not belong to me, but in the *first* catalogue is credited to Mr. C. Heginbotham. I beg to inform "Inquirer" that I value my pictures at a great deal more than at 4s.—Yours etc.,  
April 30th, 1891.  
LESLIE SELBY.

SIR,—An amateur is the dealers' best friend, and if I was a manufacturer of dry-plates I would present each one with a detective camera, if he would promise to use my plates solely for twelve months. An amateur is one with a hobby, and if the hobby can be made to pay for itself, so much the better for the hobby. It is said that amateurs sell their pictures to their friends, but as a rule their friends take particular good care that they don't. Is it *infra dig.* to be considered a professional photographer? A friend of mine whose "screw" is, perhaps, three times as much as mine (lucky dog!) paints a little in his leisure time and sells the pictures; and yet I, if I am an amateur photographer, must not (if I have the chance) sell mine. Happy England!—Yours, etc.,  
Liverpool.  
JAMES WOOD.

SIR,—I am pleased to see "Inquirer," in your last number, again uses the question of the status of those, so called, amateurs who sell or offer to sell their photographs. For my part, I hold that anyone who sells his pictures, whether it be for a livelihood, or to seek out some other way of earning a living, or merely to meet part of the cost of his hobby, ceases to be an amateur by thus entering, in however limited a way, into com-



petition with one or other of the various branches of the professional worker.

While on this question, I may put another case for the opinion of your readers. A gentleman, who by his talent would prove an honour to either the professional or amateur sections of photographers, takes in India a medal in classes especially declared for professionals, and in Gloucester the same exhibitor is awarded first in a class equally reserved to amateurs! Surely it is time there should be a clear understanding as to the line which should divide (at least at exhibitions) the professional from the amateur.

—Yours, etc., S. FRANCIS CLARKE, L.D.S.

May 2nd, 1891.

SIR,—Referring to the letter signed "An Inquirer," in your issue of the 1st inst., I see amongst others my name is mentioned.

I much regret this, as although I had placed a price against the frames exhibited, I had no intention of selling them. As a matter of fact, these particular pictures were *given* away before the exhibition opened. In filling up the entry form I fixed a price more by way of a joke. It did not occur to me at the time (although it did afterwards) that I was in any way compromising myself, or helping to reopen the much vexed question of amateur v. professional.—I am, etc.,

W. H. WHITTARD.

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#### EXPLOSION OF A REGULATOR ON AN OXYGEN GAS CYLINDER.

SIR,—I do not think Mr. Brandreth gives sufficient particulars. He does not say whether the hydrogen had been turned on and afterwards turned off while the leak in the oxygen side was being remedied. It is most unusual to turn on the oxygen first; if this is done, a little oxygen is almost sure to get into the hydrogen tubes, sufficient to cause them to blow off when a light is applied to the jet, more especially if a dissolver is used.

Within the last four weeks there have been three explosions with oxygen cylinders while being tested with a gauge: (1) One caused serious injury to the operator, who has been laid up a month. (2) Another operator had the end of the steel tube in the gauge blown off, and lost all the gas; no other damage. (3) Operator had his hand seriously burnt by the ignition of the leather washer between the cylinder and the gauge; the gauge did not actually explode.

These explosions could not be caused by mixed gases; the cylinder in each case was connected only to the gauge, which had never been used for hydrogen; but were caused by the great pressure being suddenly checked at the end of the steel tube in the gauge, which is too small to possess sufficient elasticity to withstand the sudden pressure.

Mr. Brandreth had turned the gas on and off several times with the tap at the jet turned off. The bellows would remain open unless the leak were very large, consequently the valve of the regulator would be closed.

Now here we have exactly the same conditions as when the quantity of gas in a cylinder is tested by means of a gauge. The small quantity of gas between the valve of the gauge and the valve of the cylinder had leaked out. When the valve of the cylinder was again opened, possibly very quickly, the gas rushed with great force against the closed valve of the regulator, which gave way. The flame was caused by the india-rubber, or possibly some portion of the metal work, igniting with the friction.

Should this be the cause of the explosion, the remedy is simple: never turn on the gas from the cylinder unless you are sure the regulator has been emptied either by removing and replacing the india-rubber tube or turning on the top of the jet.—Yours, etc.,

April 29, 1891.

C. GOODWIN NORTON.

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#### DISTINGUISHING COLOURS.

SIR,—I observe in your columns a statement quoted from an African traveller to the effect that certain tribes are only capable of distinguishing three colours—white, red, and black—and the proof of this is said to be the "best possible," viz., the absence of names for other colours. A similar argument has been urged by eminent scholars to prove that the Homeric Greeks were very deficient in the sense of colour, and in general that the colour sense is of late development. The argument is, however, worthless. Names are not given until they are wanted for the purpose of communication, and names of colours are, generally speaking, not wanted until the pigments or dyestuffs, etc., become objects of commerce. Of late years our colour vocabulary has been

enlarged by the addition of such names as mauve, magenta, etc. <sup>18</sup> This because our colour sense is more developed and that we were until recently incapable of distinguishing these colours? Not at all; but because the dyes have been introduced into commerce. What a vast majority of our population have no words but blue, green, red to designate a vast variety of shades, which, nevertheless, they are perfectly able to distinguish. The names orange and violet as names of colours are indeed comparatively modern, and many others. Even those whose business compels them to find definite names for a great variety of tints are driven to such combinations as "English grey," "Dutch grey," "French grey," "Indian grey," "pale grey," "neutral grey," "silver grey," for seven wholly different colours. So there is "pale green," "blue green," "dark sage green," "pale sage green," "deep green," etc. Is a person who is unacquainted with these specific names, and uses only the generic "grey," "green," to be considered incapable of distinguishing the many colours so named? By the same argument, posterity may prove that we are incapable of distinguishing smells except as sweet, nasty, or pungent, and tastes except as sweet, sour, bitter, acid, and, perhaps, one or two more.

The argument from the absence of names has some value when applied to animals or plants, useful, noxious, or otherwise interesting, but not when applied to sensations.—Yours, etc.,

X. Y. Z.

\* \* \* \*

#### WHAT IS MEANT BY THE TERM "INSTANTANEOUS" AS APPLIED TO PHOTOGRAPHY.

SIR,—I was very glad to see Mr. Meldon's letter on the above, as I think it is at present a point which is very far from clear. I think it is manifestly unfair that difficult "instantaneous" work, such as pictures of athletic contests, horse racing, etc., should be judged in the same class as work which only required perhaps one-tenth of a second exposure, as against at least one-three-hundredth or one-four-hundredth of a second in the former case. To be eligible for an "instantaneous" class, I think the picture should be such that the principal object is manifestly an object in more or less rapid motion, and on this ground I would not allow such pictures as cattle studies to compete against genuine rapid work, simply because the cattle may or may not have been whisking their tails about during the exposure. I also think that sea work ought always to be in a class for itself, as it is by far the easiest work which has any claim to the term "instantaneous." I should also like to know exactly what constitutes a picture which is eligible for a "hand-camera" class.—Yours truly,

May 4th, 1891.

W. B. MACCABE.

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#### SOCIETY FOR STREATHAM.

SIR,—In common with several friends interested in photography, I am anxious to see whether it be not possible to start a Streatham Camera Club.

At present, I believe, nothing of the sort exists within two or three miles, and as there are evidently a large number of amateurs living in this neighbourhood, I feel sanguine that the idea will meet with general approval.

Several friends to whom the proposal has been made have already expressed their desire to help in forming such a club, and it has been suggested that I should ask you to lend us your powerful aid in making the affair public.

As soon as a sufficient number have agreed to join, a meeting will be held to fix the subscription, etc.

In the meantime I should be glad to hear from any to whom the idea commends itself.—Yours, etc., REGINALD C. GOULD.

Woodlawn, Leigham Court Road,  
Streatham, S.W., May 3rd, 1891.

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#### THE EXHIBITION AT BRIXTON.

SIR,—I notice an omission in your account of our exhibition in this week's issue which I will thank you very much to rectify in next week's paper. I refer to the omission of the name of one of the judges, viz., Mr. F. W. Edwards, the popular President of our neighbouring society, the South London, who, at some trouble to himself, kindly acceded to our request that he would assist Messrs. Traill Taylor and A. R. Dresser.

Just a line to correct this inadvertency will greatly oblige.

—Yours faithfully,

May 2nd, 1891.

F. W. LEVETT.

NOTE.—We of course gladly publish this correction.—ED: AM: PHOT:



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER IX.

*Figs. 18, 19.*—P. De Laer, from his long residence amongst the Italian painters, has constructed most of his pictures, though generally in the low walks of art, on the most regular and severe principles of their grandest compositions. As this regularity is considered by some to be incompatible with the negligence of arrangement which they suppose necessary to the picturesque, I shall here make a few observations on that doctrine. I consider it to be false, and not tenable, when referred to the operations of nature; for we find her conducting and exhibiting the most beautiful appearances and effects in the humblest and most trifling of her works, by the same laws that regulate her in the formation of the most sublime. Abernethy says, "That work is beheld with admiration and delight, as the result of deep counsel, which is complicated in its parts, yet simple in its operations, where a variety of effects are seen to arise from one principle operating uniformly." When we refer



FIG. 18.—P. DE LAER.

to the great masters in poetry, we find that the Idyls of Theocritus are not less regular than the Iliad of Homer; or the Georgics and Eclogues of Virgil than the Eneid. The English pastorals have failed in giving pleasure, not by the regularity of their construction, but in consequence of their not being founded on truth; the language and scenery not being that of nature in such situations.

Let me here caution the student against supposing that I mean grossness and vulgarity as proper accompaniments in his representations of common nature; he must convey such scenes to us with the appearance of their having passed through a susceptible and amiable mind, anxious to render nature agreeable, not to make her disgusting.

In the works of the best painters in the lower walks of the art, there are numberless examples of this regularity. Even Wouvermans, whose soft and delicate touch seems ill-suited to severe regularity of form, or light and shade, has received an advantage by its adoption; his best pictures being founded on the simple construction of his rival. A regular form can always be rendered sufficiently irregular by the means of light and shade; and if P. De Laer's pictures possess this property of light and shade too decidedly for such a purpose, we must recollect that from his painting upon a dark red ground (as was used at the time by many of the Italians) his works often look harsh; the lights, from

being thickly painted, having resisted the influence of the ground, while his half tints are absorbed and indented in the shadow.

As the student will have occasion to refer to the prints after the different designs here given, I beg leave to remark, that, in most of the Italian prints which I compared with



FIG. 19.—P. DE LAER.

the original pictures, I found the characteristic points often not attended to. The strong lights wanted their value, either from the shadows being deficient in their proper strength and quietness, or from the introduction of aerial perspective (a circumstance seldom influencing the conduct of the great masters either of the Italian or Venetian schools), or from the manner in which the strong darks and lights were brought in contact. I believe sufficient has already been written on engraving, nor am I against its being considered a liberal translation; the beauty of lines is perhaps the only substitute engravers can give for the absence of colours; but surely it is not too much to request that a strong red or a strong blue (however ornamented



FIG. 20.—CORREGGIO.

by lines) be referred to its proper scale, either as the extension of light or the production of shadow. These errors seem to have arisen from contemplating the picture in the twilight for the more easy detection of the light shade; a most fallacious method; for, in such case the most projecting and the most retiring colours are rendered similar.



*Fig. 20.*—As in figure 17, we may observe this form influencing the arrangement of the whole group; we have here the heads composed on the same principle, and repeating each other with a simplicity which is safe only in the hands of the best painters. I have mentioned regularity as a quality to be found in the most sublime subjects in painting; but to infer from that, that regularity constituted sublimity were as absurd as to say irregularity constituted the picturesque.

Here we have examples, in figs. 18 and 19, of strictly formal composition applied to common subjects, and the art is so good that it is scarcely visible except to the practised eye. Art is always the more perfect, with qualifications I have already mentioned, in the degree in which its impression is made by means that do not court notice. By way of contrast, in fig. 20, we have a noble subject treated on exactly the same principles, showing that art is the same however its subjects may differ. This latter sketch may afford suggestions for a family group, less formal than those too often presented by the photographer.

In condemning the method of the engravers of contemplating pictures in the twilight for the more easy detection of the arrangement of light and shade, our author might have been referring to the modern practice of some artists who indulge in the affectation, when they are studying a view, of half shutting the eyes, as though they could see better when partially blind than when in full possession of their faculties. The student may be quite sure that he will do better if he will learn to see and judge with his eyes open, than to persuade himself that he sees more clearly with them half shut.

(To be continued.)



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XV.

LENSES CONSIDERED AND CLASSIFIED WITH RESPECT TO THEIR CAPABILITIES FOR INSTANTANEOUS WORK.

THE fathers of photography were greatly troubled and hindered in their work by the want of suitable lenses. The first lenses by which a picture was ever obtained by the agency of light were those of the "solar microscope." Writing in 1802, Davy (the great chemist) remarks,—“The images formed by means of a camera obscura have been found too faint to produce in any moderate time an effect upon the nitrate of silver. To copy these images was the first object of Mr. Wedgwood, in his researches on the subject, and for this purpose he first used the nitrate of silver, which was mentioned to him by a friend as a substance very sensible to the influence of light; but all his numerous experiments, as to their primary end, proved unsuccessful. In following these processes I have found that the images of small objects, produced by means of the solar microscope, may be copied without difficulty on prepared paper. This will probably be a useful application of the method; that it may be employed successfully, however, it is necessary that the paper be placed at but a small distance from the lens.”

For Davy, then, can be claimed the honour of being the first to produce an image upon a sensitive surface, by means of light acting through a glass lens.

Singularly enough, another famous pioneer of photography, Joseph Nicéphore Niepce, employed\* “the lenses of the solar microscope, which, as you know, belonged to our grandfather, Barrault,” in the production of his earliest camera pictures in 1816. It is even believed to have been the want of suitable lenses of his own which largely induced Niepce to enter into partnership with Daguerre in 1829. Daguerre

had “periscopic” lenses, made according to the plan of the English scientist, Wollaston, and obtained through Chevalier, the well-known Paris optician. But even Daguerre’s early lenses were what we should consider as extremely imperfect. Their visual and chemical foci did not agree; and they could only be used with a small stop, about  $f/30$  at least.

After the publication of Daguerre’s and Talbot’s discoveries in 1839, improvements in lenses were made rapidly. The first to call attention to the need for harmonizing the visual with the chemical focus of any lens used for photography was J. T. Towson, of Liverpool, in 1839.\* It may be here stated that the differently coloured rays of light are bent or refracted to a different extent when they pass through any prism or lens; the red rays being bent the least, and the violet rays the most. Now we have already explained that we see objects principally by the aid of the yellow rays, which are the best able to affect the fibres of the optic nerve which are distributed over the retina or sensitive layer at the back of the eye. But the blue, violet, etc., rays, which mainly affect our dry plates, are bent, or refracted, or brought to a focus nearer to the lenses than the yellow rays. Thus if we use a simple convex spectacle lens in a camera, we get a blurred image on the plate, although the image on the focussing screen looked quite sharp. This was the defect pointed out by Towson; and the early workers remedied—or rather endeavoured to remedy—it by moving the plate nearer to the lens after focussing, or by having the dark slide so made that the plate and the focussing screen occupied different planes. With a convex spectacle glass and using a stop about  $f/20$ , it will be found that fairly sharp pictures can be obtained if the plate is moved towards the lens, for from the one-thirtieth to the one-fortieth of the focal length of the lens, after focussing. Thus, if the focus of the spectacle-glass be ten inches, the lens must be moved forward one-fourth of an inch fully.

*The First Rapid Lens.*—Although portraits of living beings were obtained by the daguerreotype process as early as 1840, by Morse in New York, yet when we say that they necessitated an exposure of twenty minutes in bright sunshine, it is sufficient to show that the results were worthless, except as a curiosity. In the same year, two Americans, named Wolcott and Johnson, patented a camera in which a mirror was used instead of a lens. They sold their invention to one Beard (who had purchased from Daguerre the right to work the daguerreotype process in England), and with this reflecting camera and the use of bromine as an accelerator the first really successful portraits were taken in London in 1841. Beard was originally a coal merchant; he made over a hundred thousand pounds out of his daguerreotype rights; but lost it all in speculations. One other English photographer, Claudet, also held a license direct from Daguerre.

During the years 1839-41, everywhere in Europe, the daguerreotype process was being tested, and the demand for better lenses was great and urgent. As is commonly the case, the demand produced a supply.

The necessary mathematical calculations to discover the curves and ratios necessary for a lens which should bring to the same focus the blue and the yellow rays, and which should also possess a wide aperture in proportion to its focal length (retaining at the same time tolerable flatness of field and good definition), are extremely abstruse, and present very difficult problems. But Professor Petzval, of Vienna, succeeded in 1841 in devising the necessary combinations of flint and crown glass; and the German optician, Voigt-

\* See letter from Niepce, written at Chalons to his brother Claude, then residing at Kew.

\* “On the Proper Focus for the Daguerreotype,” *Philosophical Magazine*, vol. xv., p. 381.



lander, manufactured in that year the first "portrait lens," which has remained practically unaltered as a standard down to our own days.

I. *The Most Rapid Lens Made.*—In the old wet collodion days the work of photographing babies and young children was anything but a source of pleasure to the operators. It may be said that it is scarcely so yet. But the advent of the gelatine dry-plate has enabled the rapidity of studio exposures to be immensely increased, and the liability of the subject moving during the exposure has been in a like degree decreased.

Perhaps the "baby lens" made by the late J. H. Dallmeyer\* was the most rapid lens ever constructed. Its aperture was fully  $f/2$ , that is, the diameter of the lens was as much as one-half the focal length, a lens of only six inches focus being three inches in diameter. Of course, the field of view of such a lens was very restricted, being not more

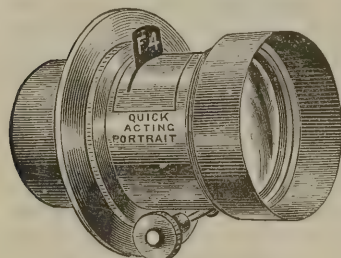


FIG. 1.

sacrificed to rapidity. It was, moreover, a very expensive article.

II. *The Portrait Lens in Instantaneous Photography.*—The "portrait lens," properly so called, has its largest aperture equalling  $f/4$ ; that is, a portrait lens of ten inches focal length has its largest stop  $2\frac{1}{2}$  inches in diameter. It is also long (*i.e.*, the lenses forming it must be placed several inches apart), and its mount is necessarily large and heavy. For these and other reasons a portrait lens seldom finds favour with the "sly snap-shooter" of the present generation. But it is easy to imagine work in which the extremely large aperture ( $f/4$ ) of the portrait lens would enable its possessor to obtain results which would otherwise be impossible. Mr. Traill Taylor, when depicting life as it exists on the doorsteps and in the gutters of the purlieus of Drury Lane, found a portrait lens of great value. Still, for the average worker, the portrait lens is merely a "white elephant." We may add that it is very costly.

(To be continued.)

## Photographic References.

By MAJOR J. FORTUNÉ NOTT.

### DEVELOPMENT.

(Continued from page 247.)

In continuation of the subject of the pyro-ammonia developer, it now becomes necessary to specify a formula and its method of preparation:

No. 1.			
Pyrogallie acid	.. ..	$\frac{1}{2}$ oz. (240 grs.)	
Sulphite of soda	.. ..	2 " (960 " )	
Water .. ..	.. ..	$\frac{1}{2}$ pint (10 oz.)	

No. 2.			
Ammonia .880..	.. ..	$\frac{1}{2}$ oz. (240 minims)	
Water .. ..	.. ..	1 " (480 " )	

No. 3.			
Bromide of potassium..	.. ..	2 drms. (120 grs.)	
Water .. ..	.. ..	$\frac{1}{2}$ oz. (240 minims)	

No. 1 solution should certainly be made up with distilled water, or, as before remarked, when this is not procurable, the water should be boiled and then allowed to get cold. The sulphite should be dissolved first, then the pyro added, and the bottle should always be kept well corked.

No. 2 solution should be used in a dropping bottle. By testing, it will generally be found that these bottles allow rather large drops to escape, which, by measurement, will be found to contain  $1\frac{1}{2}$  minims, instead of 1 minim, as is generally supposed. Therefore, each drop of this solution will contain  $\frac{1}{2}$  minim of ammonia. If the make of bottle used does not allow so large a drop to pass, then allowance should be made for this fact in the proportion of water originally used in making the solution. The object of keeping it in a dropping bottle is to insure the ammonia against the loss of strength that takes place every time the cork is removed, which is necessary if this solution is made up for use in the ordinary way.

No. 3 solution is the ordinary restrainer, which should again be kept in a dropping bottle, but one of a different pattern, so that in the dark it can be recognised by the feel, and consequently confusion between it and the ammonia bottle avoided.

For use under ordinary circumstances the developer should be mixed as follows:—

1 drm. of No. 1 ( <i>i.e.</i> , 3 gr. pyro),
$1\frac{1}{2}$ oz. of water,
4 drops of No. 2 ( <i>i.e.</i> , 2 minims of ammonia),
1 drop of No. 3 ( <i>i.e.</i> , $\frac{1}{2}$ gr. of bromide).

Of course, when the knowledge regarding the action of each of these constituents has been acquired, the proportions can be varied to suit the requirements of each negative. If more density is necessary, the amount of No. 1 must be slightly increased, and if traces of under-exposure become evident, the amount of No. 2 may be increased; but this should be done very carefully, and by single drops at a time, and the developer should be given time to act. Under nearly every possible circumstance a tentative method of development is the one to be preferred, and a beginner should accustom himself to this mode of procedure. Its advantages are numerous.

A good all-round soda developer is the one which the Eastman Company recommend for use with their films. We quote it herewith:—

Pyrogallie Solution.			
Pyrogallie acid	.. ..	$\frac{1}{2}$ oz.	
Sulphuric acid..	.. ..	20 minims.	
Water .. ..	.. ..	32 oz.	

Soda Solution.			
Sulphite of soda	.. ..	6 oz.	
Carbonate of soda	.. ..	4 "	
Water .. ..	.. ..	32 "	

Care should be exercised in mixing this solution, especially with regard to the purity and correctness of the ingredients. The sulphite should be pure and not sulphate. The carbonate of soda should be in clear crystals, and bicarbonate of soda should not be used by mistake.

Restrainer.			
Bromide of potassium	.. ..	1 oz.	
Water .. ..	.. ..	6 "	

The developer for use is made as follows:—

\* I had the honour to write the life of Dallmeyer for the "Dictionary of National Biography," and conceived a great respect for the clever German "master-hand," and for his no less able father-in-law, the late Andrew Ross.



Pyro solution	..	..	..	..	1 oz.
Soda solution	..	..	..	..	1 "
Water	..	..	..	..	2 "

This developer can be used for the stripping films as well as for all other kinds of films and plates. The colour of the negatives resulting from its use, although not quite so clear-looking as those produced by ammonia, will, nevertheless, be found to possess very good printing qualities.

If potash is preferred to soda, then the following mixed formula can be used, and for certain brands of plates it is one that can be used with advantage. In its power of forcing out detail quickly, potash probably ranks next to ammonia among the variations of developers made with pyrogallol.

No. 1.					
Sulphite of soda	..	..	..	..	6 oz.
Water	..	..	..	..	32 "
Pyro	..	..	..	..	1 "
No. 2.					
Carbonate of soda	..	..	..	..	3 oz.
Carbonate of potash	..	..	..	..	1 "
Water	..	..	..	..	32 "
For use take—					
No. 1	..	..	..	..	1 oz.
" 2	..	..	..	..	1 "
Water	..	..	..	..	2 "

and add a few drops of bromide solution.

The method of procedure with any of these developers must be referred to for the benefit of those beginners who may be on the point of making their first attempts at development. All the necessary dishes, jugs, and glass measures should be clean, and a broad camel-hair brush should be provided, which should receive a good preliminary washing on every occasion when its services are required. The developer should be mixed just before the light is turned down, and as it will not keep long before commencing to deteriorate, no time should be lost afterwards in using it. The bottles, trays, and other requisite appliances should be placed where they can be seen by the dim light of the ruby or yellow lamp. The plate on being taken from the plateholder should be dusted with a dusting brush, and then placed in a dish of water. Care should be taken to see that there are no air-bubbles or greasy spots that repel the water or prevent it flowing readily over the surface. To insure this fact, the developing brush should be lightly passed over the surface while the plate is below the water. After a minute's soaking the water should be drained off and the mixed developer poured over it in a steady and even manner; the tray should then be kept in motion so that the rocking, which should be of a gentle character, causes the developer to flow steadily backwards and forwards. But at the very outset the brush should again be passed over the whole of the surface to remove any air-bubbles that may have formed and would, if not removed, cause spots of a more or less serious nature to be apparent in the negative. A strange thing about development is that now and again air-bubbles will manifest themselves, and if not immediately removed the developer seems subsequently to refuse to act upon those places, although they may have been detected at an early stage of the development. The first thing to watch for in the negative is the speed with which the high or intense lights begin to show themselves; by this sign some information regarding the nature of the exposure can at once be formed, and if it has been too prolonged or too short, then the developer should immediately be poured back into the measure or developing cup ready for the purpose, and the alterations requisite to meet the case should at once be made. But directly the

developer has been removed the plate should be thoroughly washed so as to prevent as far as possible any continued action of the chemicals. To some extent this cannot be prevented, but speed in mixing the fresh developer or adding to the old one is very essential. A good dose of restrainer may save an over-exposed plate if it is added very quickly and is followed by a developer very much weakened.

(To be continued.)



## Thursday Evenings at the Camera Club.

(BY ONE OF OUR STAFF.)

MR. LYONEL CLARK presided at a very interesting meeting on the 30th ult., though the attendance was not so large as the occasion deserved. Previous to the commencement of the principal business of the evening, Mr. Davison showed some clear gelatine intended to be used for lantern slides.

Mr. J. Traill Taylor then proceeded to read his paper on "Lantern Optics." Dealing first with the radiant, he assumed the use of the limelight, and said that by repeated experiments he had come to the conclusion that two inches from the condenser might be considered a safe position for the light. When, however, the lenses did crack, the fault was due either to cell binding, too sudden approximation of the light, or currents of cold air on the lenses. To strengthen the lenses to meet the latter danger, they might be placed in cold water and gradually heated to boiling point, and then allowed to cool gradually. If some saline matter were put in the water, or if oil were used, the effect was much better. The functions of the so-called condenser were first of all to collect the rays from the radiant and then to condense them on to the slide. Of these two points the first was the most important, for what was desired was to collect the rays from as large an angle as possible and to project them forward in as near an approach to parallelism as possible. Absolute parallelism could not be obtained unless the radiant were an absolute point. Some of the cheap French lenses had done excellent service and were marvellous at the price, but those he had tested—and they were few—had failed to allow their whole surface to be utilised, and did not transmit all the light falling on their anterior surface. They transmitted an angle of from 40° to 50°, and the higher class of London made lenses claimed to embrace 60°. By a slightly increased expenditure of optical materials it was possible to increase the angle to 95°, which would more than double the intensity of the illumination. For that purpose they must have at least two lenses; the one nearest the light must be  $4\frac{1}{2}$  in. diameter to catch 95°, and should not be particularly thick. The lenses he was going to describe were not in use in this country, or in any European countries so far as he was aware, though they were the most perfect, practically and theoretically; they were used in the colleges and universities of America. The first lens was a thin one of  $4\frac{1}{16}$  in. radius, which apart from any optical advantage would enable it to bear the impact of the light, but it must be set very loosely in its cell. The test of a well-set condenser was that if the mount were given a sharp circular twist the lens would go on revolving afterwards. That lens was only 16 millimetres thick in the centre, and was formed by preference of flint glass. The second lens was 5 in. diameter, and its radius of curvature being rather shorter, combined with its larger diameter, made it proportionally thicker—28 millimetres. The loss of light by it was very little; not worth noticing. The loss by oblique incidence was very small, and that could be reduced by making the first surface slightly concave. At one time he was in love with meniscus lenses for that purpose, but was now of opinion that the plane surface performed every service in a practical manner. These two lenses should be mounted as closely as possible together, and if possible fixed permanently in the lantern and always used together. With that collecting system he polarised light with one sheet of green glass instead of the twelve generally used. These lenses collected the rays and projected them practically parallel. As to the condensing system, that was separate and should be movable, and selected to meet the particular end in view, so that one might have a set of condensers for various



purposes. The lens might be plano-convex, especially for long-focus objectives, but if for short focus it should be of crown glass, and of the crossed form in which the curves were as one to six, or two to thirteen, which latter ratio was to be preferred. The rays of this condenser were desired to come to a focus in the vicinity of the objective. Dealing as they were with practically parallel rays, it was impossible to imagine that a condenser fitted for an objective of 12 in. focus would do equally well on one of 6 in. For an objective of from 12 in. to 15 in. focus, the condenser should be plano-convex with a radius of 7 in.; for 8 in. to 10 in. the radius should be 4½ in.; and for 6 in. to 8 in. the radius should be 4 in. Condensers should be treated with the most scrupulous care in heating and cooling, currents of cold air should be avoided, and if they were loose in their cells a fracture would seldom occur. As to the objective, the image-former, the diameter of its posterior lens should be a little larger than was necessary to take in all the rays for the condenser. It was very largely immaterial where the cone of rays fell so long as it was all included in the objective. By experiment, the late Mr. J. H. Dallmeyer, Dr. Monckhoven, Mr. Byles, and himself had found that there was no difference observable, whether the apex of the cone fell on the front lens or between the two lenses. It was, however, scarcely advisable to have it fall on the front lens, as the heat given off by the radiant was very great, and might discolour the Canada balsam with which the lens was cemented. There was also another reason: glass was very sensitive to light, and greatly deteriorated under the influence of strong light. The back lens of the objective being larger than necessary, would collect the rays reflected from the image itself; it also enabled it to be brought nearer the light, which was an advantage with the ordinary condensers. The lens tube should be longer than that used for photographic purposes. If photographic lenses were employed for the objective they should be of the carte-de-visite form, which were corrected for flatness of field, even if there were slight astigmatism.

Commander Gladstone opened the discussion with the observation that to his mind the chief point in the condenser was the glass of which it was made, for very few people appreciated the loss of light in passing through green glass condensers. Besides, if the slide were of small diameter, and in close contact with a 5 in. condenser, not nearly the whole of the light would be utilised. He had no doubt, however, that the system the reader had described was the proper one.

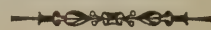
Mr. Elder said Professor Boys always inclined a piece of plain glass against the condenser, and between it and the light, by which means he had saved many condensers. If the heat got too great, the sheet of glass cracked and drew his attention to the light, and he attended to it before further damage was done. It had struck him more than once that the whole system of lantern projection might be altered and the light focussed on the slide. Commander Gladstone here gave a good hint, which may be useful to many lantern workers. After trying all kinds of dodges, he at last got a Sugg's chimney—16 in. long and 5 in. in diameter, such as used for their 500 c.p. light—and had it cut into four, and then put one portion right round the light, and that piece of chimney he had not cracked yet. Mr. Harrison had an idea that the practical value of the lantern would be increased if there were a power of altering the distance between the slide and the condenser. Mr. Kapteyn desired to know if lenses were deteriorated by the sun falling full upon them.

The Chairman's idea was that the most striking point about the system was that the rays were first collected into parallel and then condensed. There was a much smaller angle of rays used in the ordinary lantern than at first appeared, as the condenser and slide were both fixed, and the only moveable points were the light and the objective, and they must be regulated to secure good illumination, and they had often to carry the radiant further from the condenser, which, of course, reduced the angle. There was nothing in the lenses described by the reader to make their cost large, and possibly some optician would take the matter up.

Mr. Traill Taylor, in replying on the discussion, said if the condenser and slide were moveable, as he had always taught, the whole light could be focussed on a slide one inch in diameter. The degradation of tone by green glass was very great, and another degradation of tone arose from printing transparencies on green glass and covering them with the same material. Some slides became exceedingly offensive under these circumstances. Years ago he had had some transparencies printed on French crys-

tal glass, which showed no colour even when looked at edgewise. Mr. Newton, sen., once told him that he had never lost a condenser since he interposed a piece of slightly curved glass between the light and the condenser. The sun falling on the photographic lens set up a variety of reflections, and also degraded the glass, as was shown by the fact that people who used their lenses for solar enlarging complained that after a time the lens got slower. Mr. Little remarked that a Boston photographic firm imported no less than £8,000 worth of French crystal glass for transparencies alone in one year.

A cordial vote of thanks having been passed to the reader of the paper, the proceedings terminated.



## The Picture Galleries.

By "LOITERER."

### NEW GALLERY SUMMER EXHIBITION.

ENTERING the West Room of the New Gallery, one is reminded of the loss sustained by the death of Keeley Halswelle by the sight of his excellent "Kings of the Forest" (4). Unfortunately, the long season of fog seems to have played havoc with not a few canvases, e.g., Mr. H. S. Tuke's "Lamp-cleaners" (12). The picture by Mr. J. M. Strudwick—"Elaine" (17)—is excellent in colouring and drawing, and Mr. E. Stott's "Peaceful Evening" (18) realises its title. Venice suits the skill of Miss Hilda Montalba (20) as admirably as it does that of her sister, whose painting of "The Piazzetta, Venice" (257) is very fine indeed. Mr. T. M. Rooke is successful with his sketch of a church at Troyes (24). We think most people will admire "A Frosty Sunrise in the Marshes" (30) from the brush of Mr. G. H. Boughton, A.R.A. How fortunate Mr. William Wontner was in his model for "Lorna Doon" (30). The complexion is very well painted. Mr. F. Walton sends a good sketch, "Near Ewhurst" (48). A lurid and dramatic picture by Mr. E. M. Hall is entitled "Marriage by Capture" (49). A very professor-like portrait of Dr. Nichol (50) and an ungraceful portrait of Mr. J. M. Heathcote (136) represent Mr. W. Q. Orchardson, R.A. There is a sleepiness about Mr. Alfred Hartley's "In a Suffolk Lane" (51) which is exactly suited to the subject. Lord Randolph Churchill has so changed his appearance that Mr. Edwin Ward's portrait of his lordship (52), we fear, will be irreconisable in time to come. This picture will find a home in the interesting collection of portraits of modern statesmen which belongs to Mr. Henry W. Lucy. The portrait by Mr. John J. Sargent (56) is well worth looking at from the centre of the room, whence it will be seen to be extremely good. Mr. J. J. Shannon is rapidly progressing. His best portrait is that of Miss Clough, Principal of Newnham College and sister of the poet, Arthur Clough (61). Mr. J. E. Christie shows to advantage in "When the tide is low" (66). Our verdict on Mr. M. R. Jones' "Wood-cutters" (69) is that this picture is admirable. Despite a formality about "Cherries" (70), Mr. C. E. Hallé is to be complimented on this as well as on four other pictures in an exhibition which owes so much to his labours. The portrait of Mrs. Reckitt by Mr. W. Lewellyn (73) must not be overlooked, if, indeed, it were possible to ignore this striking picture. The thoughtful face of an historian peers from the canvas of Mr. H. Weigall (85). Buffalo Bill would appreciate Mr. Arthur Lemon's "Lost Comrade" (87). The "Passing Glory of an April Day" seems to be depicted in Mr. W. Padgett's "Hurried Clouds on the South Downs" (90). Marvellous marble characterises Mr. Alma-Tadema's "Love in Idleness" (96). The portrait of "Sir J. Preston, Bart." (98), by Mr. F. M. Skipworth, is decidedly good. There is clever painting in Mr. C. N. Hemy's "Trout" (99), and in Mr. Macallum's "Fishermen of Positano" (102). Two impressionistic pictures by Mr. J. R. Oldfield (104, 109) are noticeable. In the

### NORTH ROOM

Mr. Albert Goodwin exhibits a good picture entitled "October" (116). Mr. C. N. Kennedy appears to have hurried over his portrait of the Conservative "Whip," Mr. A. Akers-Douglas, M.P. (123). I wonder how many will admire Mr. H. Dalziel's "Wet Harvest" (125). Mr. Justin McCarthy, novelist, politician, historian—"and the greatest of these" is historian—is well depicted by Miss W. H. Thomson (129). Another good portrait is "Esmé" (138) by Miss S. Birch. We are too content with



Mr. Alfred Parsons and Mrs. Allingham to encourage Mr. Philip Burne-Jones to depict any more "Surrey Gardens" (143). The most astonishing picture in the whole exhibition is "Flood" (145), by Mr. J. T. Nettleship, which is terrible in its fearfulness. Mr. Ward's "Joyce" (149) is very pretty. Mr. J. W. Waterhouse, A.R.A., deserves high praise for his clever "Circe" (153). The portrait of a lady by Sir J. E. Millais (156) is not extraordinary. To some people, Mr. F. W. W. Topham's picture of the "Garden Front to Grocers' Hall" (164) will come as a revelation of a spot in the City "where dew falls." Professor Herkomer, R.A., sends a good portrait of "Lady Helen Ferguson" (167), but Mr. P. Bigland has not quite caught the expression in his picture of "Mr. Gladstone" (179). Doubtless, the artist was at a disadvantage, from the occupied air which the ex-premier assumes when writing. Mr. W. Maclaren has a charming picture in "By the Edge of the Stream" (181), and the hay in Mr. Adams' "Sunshine" (185) is well painted.

#### SOUTH ROOM AND BALCONY.

Mr. E. J. Poynter, R.A., is not seen at his best in "The New Barn, Sussex" (215). The portrait of Mr. Beatty-Kingston, the well-known special correspondent, by Mr. F. Goodall, R.A., is not striking. The curious effect in Mr. W. Padgett's picture (237) makes it interesting. Sir Arthur Clay's "Herr Joachim" (240) lacks the fire of inspiration which brightens the eyes of the great violinist when he is playing. There is much merit in Mr. J. B. Ottewell's "The Wood, Solemn and Silent Everywhere" (276), and "In a Mossy Bed" (280) reflects much credit on Mr. J. Fitzmarshall. Miss Nina Hardy has a pretty subject in "On the Best of Terms" (289), while few will pass without a smile Mr. E. Barclay's "Amesbury Church" (293). This represents a quaint village church, with clothes-lines in its neighbourhood, and to the picture Mr. Barclay wittily adds, "Cleanliness is next to Godliness." A rather dismal young lady is "Phyllis" (301) by Miss K. Stewart. She appears to be reading "Is Life Worth Living?" which, as Sydney Smith remarked, "depends upon the liver." Mr. J. Beck sends a very picturesque canvas in "Autumn Woods" (310). Professor Huxley's married daughter, Mrs. Roller, scores with her clever picture (311). All the pencil drawings by Mr. Rudolf Lehmann are admirable (325-333). The new acquisition to *Punch*, Mr. E. T. Reed, exhibits two drawings for our contemporary (343, 344), and both of them are remarkably good. The sculpture at the New Gallery is not very extraordinary, although the work of Mr. E. Roscoe Mullins, Miss E. Hallé, and Mr. Conrad Dressler is worthy of notice.

**Snap Shot Developer.**—The following, sent us by Mr. F. Young, will be found useful:—

Solution A: Weigh 6 drams sulphite of soda, dissolve in  $1\frac{1}{2}$  ounces water, then add 25 grams citric acid, finally add 2 drams of pyro, and make up to  $2\frac{1}{2}$  ounces with water.

Solution B: A sat. sol. common washing soda.

To use the developer, take 1 part of A to 7 of B.

This developer is only for snap shots. Time exposures would be hopelessly fogged, but since using it as above I have never failed to get a good, sparkling negative full of detail.

**Dry-Plate Photography.**—We have received from Messrs. J. Lancaster and Sons, Birmingham, a copy of their 1891 Catalogue of Photographic Apparatus. It is a most excellently arranged book, and every amateur photographer should possess a copy. The excellence of the goods manufactured by Messrs. Lancaster needs no praise from us, as it is a fact that from the cheapest to the most expensive article manufactured by them, they are of uniform excellent quality and manufacture. We are sorry to note that Messrs. Lancaster have found it necessary to append the following cautions to buyers "against spurious imitations." They are determined to send out only goods of the best possible quality, and would ask purchasers to see that every article is stamped with their trade mark, as in many cases they have found their cameras have been sold with most inferior slides, and that lenses have been put into cameras of a very common type and sold as their sets. A method of deception that prevails largely is to put a common French rectilinear, or a single lens on a camera advertised as Lancaster's camera, etc., at a large discount off makers' prices. Messrs. Lancaster state that they do not supply any but legitimate members of the trade, and warn buyers against being taken in by these deluding advertisers. This caution cannot be too widely made known, and the amateur photographer will do well either to buy of Messrs. Lancaster, or exercise considerable discretion as to the purchase of their goods from firms advertising them at prices below those given in the firm's catalogues,

## Quarterly Examinations in Photography.

**Question 11**—An operator is using a 15 in. focus lens with a diaphragm of  $\frac{3}{4}$  in. aperture, and wishes to use a 9 in. focus lens with a diaphragm of the same aperture,  $\frac{3}{4}$  in. What will be the relative exposures required for the same subject with the second lens under precisely similar lighting, and how is this determined?

**ANSWER.**—A diaphragm of  $\frac{3}{4}$  in. aperture with a lens of 15 in. focus would be  $f/20$ .

$$\frac{15}{1} \div \frac{3}{4} = \frac{15}{1} \times \frac{4}{3} = \frac{20}{1} = 20.$$

A diaphragm of  $\frac{3}{4}$  in. aperture with a lens of 9 in. focus would be  $f/12$ .

$$\frac{9}{1} \div \frac{3}{4} = \frac{9}{1} \times \frac{4}{3} = \frac{12}{1} = 12.$$

By squaring these numbers  $f/20$  and  $f/12$ , and comparing gives the relative exposures—

$$20 \times 20 = 400. \quad 12 \times 12 = 144.$$

$$\frac{144}{400} = \frac{12}{33} = \frac{4}{11} \text{ nearly.}$$

If with the 15 in. lens the exposure required was 11 sec., the 9 in. lens would only require 4 sec., or if the former required 1 sec. the latter would require  $\frac{4}{11}$  sec.

Yxol.

**Question 12.**—What is the action of a solution, (a) of sugar, (b) of glycerine, (c) of potassium bromide, (d) of potassium citrate, in the developer? Explain your answers.

**ANSWER.**—All four act as restrainers. The first two are physical restrainers, and probably cause the developer to act more slowly by making it thicker and more viscid. Some people fancy that the use of such physical restrainers affects the colour of the resulting negative less, and blocks up the shadows less than the chemical restrainers. Experiments I made pointed to glycerine being a more powerful restrainer than sugar.

The potassium bromide probably forms a double salt with the silver bromide, which is less easily reduced than the silver bromide, and while it allows a certain amount of detail to appear, to some extent checks the action in the high lights.

Potassium citrate appears to check detail, but to allow the high lights to gain density.

Unless some restrainer is employed, fog would ensue, as the unaltered silver haloids would be reduced.

R. C. M.

**The "Gentlewoman."**—The rivalry of illustrated journalism results in such wonderful productions as the spring number of this journal. This splendid sixpennyworth of social subjects has additional attractions in the number before us. Firstly we have a clever and complete parable from the facile pen of Mrs. Lynn Linton. Secondly, we have an interesting account of Mr. Beatty-Kingston, the special correspondent, by Mrs. George Augustus Sala. Thirdly, we have capital coloured fashion-plates, which will delight the ladies almost as much as a sight of the shops in which the costumes are exhibited. Lastly, we have the numerous features which have made the *Gentlewoman* the favourite which it is. Its older contemporaries, the *Queen*, the *Lady*, and the *Ladies' Pictorial* produce wonderful numbers, but "this excelleth them all." With the modern Pandora this magazine should become a constant occupant of her treasure-house.

**The Annual Index of the Review of Reviews.**—This book includes an "index of the periodicals of the past year and a list of standard photographs." In the index we find very liberal reference to the *Photographic Quarterly*, some twenty of the admirable articles having been quoted in the year's volume. Mr. H. Snowden Ward undertook a very heavy amount of work in the compilation of the "Index of Standard Photographs," and in our opinion a very useless one. The leading firms of photographers are well known, and their lists are always approachable. We understand several of them refused to give access to their lists, and as a consequence the index is very incorrect. The illustrations are not representative of the best men's work. It is apparent that the compiler has been anxious to do his best, but the matter before us proves conclusively that the trade have no desire for such an index, and we question whether it is of the least service to the public. The section devoted to "Periodicals" is much better compiled, and includes a notice of the *Photographic Quarterly* and *Photographic Reporter*; but in the notice of the *AMATEUR PHOTOGRAPHER* the information is incorrect, inasmuch as the price is quoted as 2s. 6d., and the description given "Illustrations, Prize Pictures." This is unmistakably a reference to the "AMATEUR PHOTOGRAPHER Prize Pictures series." The work of the section is, however, well arranged, and is a most useful help to all interested in or connected with journalism.



## "Amateur Photographer" Dark-Rooms, 1891.

THE "DARK-ROOMS" kindly placed at our service for the use of amateur photographers are classed as follows:—

*a* Amateur *d* Dealer or professional.  
*h* Hotel *s* Photographic society.

Letters of Introduction, Three Penny Stamps.

<i>a, d</i> Aberdeen	<i>d</i> Deal*	<i>a, d</i> Leeds	<i>d h</i> Ryde, Isle of Wight
<i>d</i> Aberystwith	<i>d</i> Derby	<i>a, d</i> Leicester	
<i>d</i> Addingham, Yorks*	<i>a</i> Devizes*	<i>d</i> Leek, Staffs	<i>a</i> St. Agnes
<i>d</i> Andover, Hants*	<i>h</i> Dingwall, N.B.	<i>a</i> Lenzie, N.B.	<i>d</i> St. Andrews, N.B.
<i>d</i> Aylesbury, Bucks	<i>a</i> Doncaster	<i>d</i> Leytonstone, Essex	<i>h</i> St. Asaph
	<i>a, d, h</i> Douglas, Isle of Man	<i>d</i> Lincoln	<i>d</i> St. Bees
<i>d</i> Banff, N.B.	<i>d</i> Dover	<i>d, s</i> Liverpool	<i>a</i> St. Helens*
<i>d</i> Barmouth, N. Wales	<i>d</i> Dresden, Germany	<i>h</i> Lizard, Mullion	<i>d</i> St. Heliers
<i>a</i> Barnsley*	<i>d, h</i> Dublin	<i>d</i> Llandudno*	<i>a</i> St. Ives, Hunts*
<i>d</i> Barnstaple	<i>h</i> Dunblane, N.B.	<i>d</i> Llanidloes*	<i>d</i> St. Leonards*
<i>d, s</i> Bath	<i>d, s</i> Dundee	<i>d</i> London, Aldersgate, E.C.	<i>d</i> St. Mellons
<i>h</i> Beaconsfield	<i>a</i> Dungarvan, co. Waterford	<i>d</i> Borough, S.E.*	<i>h</i> St. Neots
<i>a</i> Bedford	<i>a</i> Duns*	<i>d</i> Charterhouse Sq., E.C.	<i>d</i> Sandgate, near Folkestone
<i>d, s</i> Belfast	<i>d</i> Durham*	<i>a</i> Chelsea, S.W.	<i>d</i> Sandown, Isle of Wight
<i>d</i> Belper		<i>d</i> Fenchurch Street, E.C.*	<i>a, d</i> Scarborough
<i>d</i> Bexhill-on-Sea*	<i>d</i> East Molesey, Surrey	<i>d</i> Fleet Street, E.C.*	<i>h</i> Seddlescomb, near Battle
<i>d</i> Birchington-on-Sea*	<i>h</i> Ebbw Vale	<i>d</i> Gracechurch Street, E.C.	<i>a</i> Shaftesbury
<i>a, d, s</i> Birmingham	<i>d</i> Edinburgh	<i>d</i> London Bridge, S.E.*	<i>d</i> Shanklin, Isle of Wight
<i>d</i> Blackburn, Lancs*	<i>s</i> Egremont	<i>d</i> New Cross, S.E.*	<i>d, s</i> Sheffield
<i>h</i> Blakney, nr. Severn Bridge	<i>h</i> Ennistymon, co. Clare	<i>d</i> Peckham, S.E.	<i>h</i> Shepton Mallet
<i>h</i> Bodiam	<i>a</i> Enfield Town*	<i>d</i> Walworth Road, S.E.*	<i>d</i> Shrewsbury
<i>d</i> Bodmin	<i>d</i> Eton	<i>a</i> Long Eaton	<i>h</i> Sleaford
<i>d</i> Bolton*	<i>a, d</i> Evesham	<i>h</i> Long Melford	<i>d, h</i> Southampton
<i>h</i> Bonar Bridge	<i>d</i> Exeter	<i>d</i> Loughborough*	<i>h</i> Southend-on-Sea
<i>h</i> Boro' Bridge, Yorks		<i>a, d</i> Louth	<i>a</i> Southport
<i>d</i> Bournemouth	<i>s</i> Falkirk*	<i>a</i> Ludlow	<i>a, s</i> Southsea
<i>d</i> Bournemouth, West	<i>d</i> Falmouth*	<i>d, h</i> Lynmouth*	<i>a</i> Stamford
<i>d</i> Bradford	<i>d</i> Faversham	<i>d</i> Lynn*	<i>a</i> Steyning
<i>d</i> Bramley, near Leeds	<i>d</i> Felixstowe*	<i>a</i> Lythe, Whitby	<i>d</i> Stockton-on-Tees
<i>d, h</i> Brechin, N.B.*	<i>d</i> Finchley		<i>a</i> Stoke-on-Trent
<i>h</i> Bridge, near Canterbury	<i>h</i> Fochabers, N.B.	<i>h</i> Macroom, N.B., co. Cork	<i>a</i> Stony Stratford*
<i>d</i> Bridlington Quay	<i>d</i> Folkestone	<i>a</i> Madeley, Salop	<i>a, d</i> Stourbridge
<i>h</i> Brigg, Yorks	<i>a</i> Four Ashes, nr. Stourbridge*	<i>d</i> Maidenhead	<i>d, h</i> Stratford-on-Avon
<i>d</i> Brighton, Hove	<i>a</i> Frodsham	<i>a</i> Mainz, Germany*	<i>d</i> Stroud
<i>d, h</i> Brighton		<i>d</i> Manchester*	<i>h</i> Sudbury, Suffolk
<i>d</i> Bristol	<i>a</i> Galashiels, N.B.	<i>h</i> Mallow, co. Cork	<i>d</i> Sunderland
<i>h</i> Broadway, Worcester	<i>h</i> Giant's Causeway, Ireland	<i>a</i> Malta*	<i>h</i> Sutton Bridge
<i>h</i> Bromley, Kent	<i>d, s</i> Glasgow	<i>d</i> Mansfield*	<i>h</i> Sutton
<i>h</i> Brough, Westmoreland	<i>a</i> Glenalmond, N.B. (nr. Perth)	<i>d</i> Margate	<i>d</i> Swindon
<i>s</i> Burnley*	<i>h</i> Glenarm, Belfast	<i>h</i> Merthyr Tydfil	
<i>d</i> Burslem	<i>d</i> Gloucester	<i>d</i> Merton	<i>d</i> Taunton
	<i>d</i> Gorleston	<i>d</i> Middlesbrough	<i>a</i> Tavistock*
<i>a</i> Cadiz, Spain*	<i>a</i> Goring-on-Thames	<i>h</i> Monmouth	<i>a</i> Thornton Dale, nr. Pickering
<i>h</i> Callander, N.B.	<i>a</i> Gravesend	<i>h</i> Montrose, N.B.	<i>h</i> Thorpe
<i>h</i> Camborne	<i>d</i> Great Yarmouth*	<i>a</i> Mountsorrel	<i>h</i> Tintern Abbey
<i>d, h</i> Cambridge		<i>a</i> Mumbles, near Swansea	<i>d</i> Todmorden
<i>d</i> Carnarvon*	<i>a</i> Halifax*		<i>d</i> Torquay
<i>h</i> Capel-Curig, N. Wales	<i>d</i> Handsworth*	<i>d</i> Newark, Notts	<i>h</i> Tring
<i>a</i> Chalfont St. Peter, Mid.	<i>d</i> Hanley	<i>d</i> Newcastle-on-Tyne	<i>d</i> Tunbridge Wells
<i>d</i> Cheltenham	<i>d</i> Harrogate	<i>d</i> Newport, Mon.	<i>a</i> Tynemouth
<i>d</i> Chepstow	<i>d, h</i> Hastings	<i>a</i> Newport, Pembroke	
<i>d</i> Chester	<i>s</i> Havant	<i>a</i> Niton, Isle of Wight	<i>s</i> Uttoxeter
<i>d</i> Chesterfield	<i>d</i> Hereford	<i>d</i> Norwich	
<i>a</i> Chipping Sodbury	<i>d</i> Hexham	<i>d</i> Nottingham	<i>a</i> Ventnor*
<i>a</i> Cinderford	<i>h</i> Holbeach	<i>a</i> Northallerton*	<i>a</i> Vienna*
<i>d, h</i> Cirencester	<i>a, d</i> Hull		
<i>d</i> Clacton-on-Sea		<i>s</i> Oldham	<i>h</i> Wadebridge
<i>s</i> Cleckheaton	<i>d, h</i> Ilfracombe	<i>a, d</i> Oxford	<i>d</i> Wakefield
<i>d</i> Clevedon*	<i>d, s</i> Ipswich		<i>h</i> Warwick
<i>d</i> Clifton		<i>h</i> Paignton*	<i>d</i> Waterford
<i>a</i> Clitheroe	<i>d</i> Jarrow	<i>h</i> Paisley, N.B.	<i>d</i> Wath-on-Dearne
<i>d</i> Colchester	<i>d</i> Jersey	<i>d</i> Penrith	<i>a</i> Wellington, Salop
<i>h</i> Colnbrook		<i>d</i> Penzance	<i>d, s</i> West Hartlepool
<i>d</i> Colwyn Bay*	<i>d, s</i> Keighley	<i>d</i> Pershore	<i>d</i> Weston-super-Mare
<i>h</i> Congleton	<i>s</i> Kendal	<i>a</i> Perth*	<i>h</i> Wetwang, York
<i>a</i> Coniston	<i>a</i> Kingstown, Dublin	<i>a</i> Poole*	<i>d</i> Weymouth
<i>d, s</i> Crewe*	<i>a</i> Knutsford	<i>h</i> Port Erin, Isle of Man	<i>d</i> Whitby
<i>d</i> Crewkerne*		<i>d</i> Preston	<i>d</i> Wimbledon
<i>d</i> Croydon*	<i>d, h</i> Lancaster	<i>h</i> Prince's Risboro'	<i>d</i> Winchester
	<i>d</i> Larne		<i>h</i> Wrexham
<i>a</i> Dalton-in-Furness	<i>d</i> Leamington	<i>d</i> Ramsgate	<i>d, h</i> Windsor and Eton
<i>h</i> Darlington	<i>d</i> Lechlade	<i>d</i> Reading	<i>d</i> Wisbech
<i>h</i> Dartmouth	<i>h</i> Ledbury	<i>h</i> Redcar	<i>a</i> Wolverhampton*
		<i>h</i> Redditch	<i>a</i> Worcester
		<i>d</i> Rhayader	<i>d, h</i> Worthing
		<i>d</i> Richmond, Surrey	
		<i>a</i> Ringwood, Hants	
		<i>d</i> Rochdale	<i>a</i> Yarm
		<i>a</i> Rodley, near Leeds	<i>d</i> Yeovil*
		<i>d</i> Romford	<i>a, d</i> York
		<i>d</i> Royston	<i>d</i> Youghal

NOTE.—At the time of going to press we have not received signed authority for the use of "Dark-rooms" marked\*; but they were all placed at our disposal last year, and are doubtless available.—Ed. AM; PHOT;



APPLICATIONS for letters of introduction must be accompanied by **three penny stamps**. Full particulars are given as to charges (if any); plates, chemicals, etc., kept in stock by dealers; terms for temporary membership of societies, etc., etc.

THE OWNER of Dark-Room will be advised by same post as the applicant. In order to prevent delay, all applications should be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., and *plainly* endorsed "Dark-Rooms."

CONTINENTAL DARK-ROOMS.—Information can be supplied respecting many Dark-Rooms on the Continent, and addresses given of firms who stock photographic materials.

#### LABELS FOR BOXES OF UNEXPOSED PLATES.

The following list in different languages may prove of service to the tourist; it has been kindly supplied to us by Mr. W. E. Woodbury:—

*English*.—Sensitive photographic plates, which will be quite spoilt if opened in the light. Only to be opened in a totally dark room or by a red light.

*French*.—Plaques photographiques sensibles. Tout détruites par l'exposition à la lumière. Prendre garde de n'ouvrir la boîte que dans une chambre parfaitement obscure.

*German*.—Photographische Trockenplatten Sehr lichtempfindlich. Werden ganz verdorben, wenn dem Lichte ausgesetzt. Müssen nur in absolut dunkeln Zimmer oder bei rothem Lichte geöffnet werden.

*Spanish*.—Las placas fotograficas sensitivas, que se inutilizan si se las expone al abrirlas, a la luz del dia, se pueden abrir sin inconvenientes en una habitacion enteramente oscura o iluminada por luz roja.

*Portuguese*.—Laminas photographicas sensitivas. Nao podem ser expostas á luz porque se inutilizam; podendo só ser abertas em camera, escura oce com luz vermelho.

*Dutch*.—Chemisch toebereide photographische platen weke gehue bedorven worden als zy aan de lucus worden blaetgeschild. Alleen te openen in eene donkere kamer of by rood licht.

*Italian*.—Piastra fotografiche sensitive che si simperanno affatto se esposte alla luce del giorno. Da aprirsi solo in una stanza affatto buia o dove regni una luce rossa.

*Norwegian*.—Følsomme fotografiske Plader, som fuldstændig forderves ved at udsættes for Lyset. Bør kun aabnes i et aldeles mørkt Rum eller ved rødt Lys.

*Swedish*.—Sjuskäusliga fotografiska plåtar, blifva förstörda om de utsättas för ljus. Fås därför ej öppnas utom i ett absolut mörkt rum.

*Greek*.—Ὅτι εὐαρόδοξοι φωτογραφικὰ πλάτεις αἰξίνῃ δα φθαρῶσιν ἂν ἀνοίχῃσιν ἐν τῇ φωτὶ. Δέον νὰ ἀνοίχῃσιν ἐν συντενῶν ὁματῶν, ἢ μέφας ἐρυθροῦν.



**Exchange Club**.—The notice in a previous number having brought in more replies than were required, a second club has been formed on same lines, and the Hon. Secretary (Mr. R. W. Copeman, Kuklos Cottage, Henstridge, Blandford) will be glad to hear from four ladies or gentlemen wishing to join to complete the number. As the object of the Club is to exchange as well as criticise members' work, there is little doubt of its ultimate success. Full particulars and rules may be had of the Hon. Secretary.

**The "Practical Photographer's" Federation**.—We understand that it is proposed to form a federation of photographers to work in the Canadian Dominion, where the organiser, Mr. W. Ethelbert Henry, C.E., believes there are exceptionally favourable openings for photographic enterprise. We are not able to judge of the matter, but should have thought that there were already no lack of photographers in Canada, and that our 'cute American cousin would cover the ground without a federation from England. The following paragraph, which we take from the prospectus, may possibly induce some of our readers to make further enquiries of Messrs. Percy Lund and Co., the County Press, Bradford, who are the "General Secretaries" of the scheme: "Mr. W. Ethelbert Henry has made careful calculation of the expense of instituting the federation, and can undertake for the sum of £2,000, to pay the promoters' remuneration, and all expenses of starting the federation as a going concern, viz., saloon steamboat accommodation from port to port, and railway fares, hotel expenses, etc., until work is commenced; outfit for centre, and outfits, including apparatus and materials, for branches, and tents, etc., where necessary. The stock of all materials will be sufficient for several weeks' working, and it is expected that even after bearing all these expenses the capital will be sufficient to allow of £400 (or £10 per member) being laid by as a reserve fund. An individual photographer emigrating, or a party of two or three, would probably spend at least £50 each in mere cost of reaching the ground."

## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

THE success of Mr. W. Crooke, of Prince's Street, Edinburgh, at the Crystal Palace Exhibition has filled the photographic world of Edinburgh with delight, all the more so that it is looked upon as making up for the treatment he received in the Edinburgh Photographic Exhibition. The photographs exhibited by Mr. Crooke in both exhibitions were the same. Rumour had it that in Edinburgh he had been awarded the gold medal for the picture which professed the highest degree of merit, but when the lists were published it was announced that "the jurors had not been able to select any one picture of such prominent merit as to justify them recommending it for the society's gold medal." The collection obtained a silver medal in Edinburgh for the set of six portraits above 12 by 10 ins., an award which pales into insignificance before the specially awarded gold medal of the Crystal Palace. Mr. Crooke is known to be one of the most artistic of photographers, and most unassuming in his business ways. For instance, although he has introduced flash-light portraiture as a branch of his business, he has left it to advertise itself, instead of courting newspaper gush. As a matter of fact, the picture of the two ladies, which was favourably noticed in the AMATEUR PHOTOGRAPHER a fortnight ago, was photographed as an ordinary business engagement, and was not, as is often the case, a picture got up specially for exhibition purposes. In connection with this it may be mentioned that it was Mr. Crooke who first introduced flash-light photography to the Edinburgh Photographic Society, which he did in a communication several years ago.

The death is announced of Mr. Magnus Jackson, a well-known photographer in Perth, at the age of 60 years. Mr. Jackson's landscape photographs are well known in the central districts of Scotland. He gained a silver medal at the Forestry Exhibition in Edinburgh in 1884, for photographs of trees, and a bronze medal and diploma of merit at the Edinburgh Exhibition of 1886 for views of ferns and foxgloves. Mr. Jackson started his photographic career as an amateur, but before commencing business on his own account he took a course of study in photography in London.

According to custom, the spring meet of the Edinburgh Cycling Clubs was held on Saturday, and according also to custom, the party, who on this occasion numbered 440, were photographed beside the picturesque ruin of Roslin Castle. The operator was Mr. J. M'Kean, of Leith, and Newington Road, Edinburgh. It goes without saying that in this district there are many cyclists who are also ardent amateur photographers, and I wonder that a club of photo-cyclists has not ere this been formed. Any such club would be certain to be a great success.

At the Edinburgh Photographic Society meeting this week, Mr. W. T. Bashford, Portobello, reads a paper on "Allotropic Silver;" and Mr. W. Forgan, Edinburgh, another on "Aluminium as a Mountant for Lenses." The first of the three outdoor meetings, or, as the Secretary calls them, "Saturday Rambles of the Society," takes place on Saturday, 16th May. The members will go to Inverkeithing, across the Forth Bridge, by the 2.10 p.m. train, and return by train from Inverkeithing at 6.25. The chief objects of interest in Inverkeithing, it is announced, are the church, the Town House, Fordel House, Gala House, and the Market Cross, while land and sea scapes may be had upon the bay, at Rosyth Castle, and on the wooded shore towards Aberdour. If the weather be favourable there is sufficient material available for the spending of a profitable afternoon. The other rambles are fixed for 6th June and 4th July, but the localities to be visited have not yet been determined.

The Council of the Edinburgh Photographic Society have drawn up regulations for competitors in the competitions for the three silver medals which are offered for work done this year. These require that all pictures must be the work of the exhibitor—exposing, developing, retouching, printing, and toning; apparently, mounting and burnishing may be done by anyone else. The prints must be direct prints. Pictures competing for the President's medal must be taken at one of the subsequent Saturday rambles of the Society. The awards are to be decided by vote of the members of the Society; the prints which secure the medals are to become the property of the Society; no competitor will be allowed to take more than one medal, but should more than one be awarded to him, he will be allowed to select which he will take; and the competing pictures will be



exhibited from the 29th of October to the 4th of November. These dates are, however, tentatively fixed. It is to be hoped that members will support the Council in this effort to improve the position of the Society.

The Leith Amateur Photographic Association met on the evening of Tuesday 28th ult., Mr. W. M. Smith in the chair. Mr. Pitkethly, the Secretary, read the third of a series of papers on elementary subjects; the topics dealt with being "Composition and Exposure." He was, he said, in favour of the use of exposure tables as a guide, but he could not advocate complete reliance on them. The prevalent use of small stops for all descriptions of work was, in his opinion, inadvisable, F. 22 being sufficient for all ordinary exposures. Photographers, he thought, should make correct exposure a study, instead of endeavouring to correct errors in exposure by development. Specimen prints on Dr. Jacoby's chloride paper were shown.

## Notes from Paris.

It has already been pointed out in these columns that it is not advisable for anybody—especially a foreigner—to be found with a photographic camera in the vicinity of any fortification, more particularly if the fortification should be near a frontier. To be seen using a camera, sketch-book, or even a map, within a mile of a fort is, in the eyes of a French *gendarme*, flat burglary, and the individual found with either in his possession is at once arrested as a spy. Just a year ago I "interviewed" an American citizen (of German birth), who had been seen consulting a map, and was, in consequence, in jail six days before the American consul could procure his release. The latest victim of the "spy craze" is Mr. E. Hewitt, son of a former Mayor of New York, who was arrested last week at Mauléon, near the Spanish frontier, whilst photographing. Mr. Hewitt was provided with a passport, and had no difficulty in proving his nationality, nevertheless he had to pass forty-eight hours in durance vile, and also (which is perhaps worse) undergo a searching cross-examination by a French *juge d'instruction*.

The *New York Herald*, which possesses a very esoteric idea of humour, had a leader on the incident, and made some remarks that were intended to be funny, but only succeeded in being stupid. The article was all the more cruel as the only "smart" man the *Herald* ever possessed used to carry a detective camera inside his coat and take snap-shots at every person he interviewed or place he described.

A new magazine has just made its appearance in Paris. It is entitled *Paris-Photographe*, and is brought out by Nadar. The first number contains an excellent portrait of Daguerre, a lot of "instantos" of men fencing, horses jumping, etc., and several well-written technical articles. Perhaps the best part, however, is the cover, which bears a beautiful figure of the Genius of Photography, drawn by Emile Bayard, the well-known artist.

## Notes from the Liverpool Centre.

(By our District Editor.)

At the ordinary monthly meeting of the Liverpool Society last Thursday there was a large attendance. Seven new members were elected.

Mr. J. A. Furnival, of Manchester, gave a lecture, "The Optical Lantern, and What can be Done with it," introducing a series of instructive and interesting experiments, including various microscopic curiosities.

Next Saturday the first excursion this year of the Liverpool Society takes place at Chirk; leader, Mr. Paul Lange.

Included in the prospective programme of the premier local society, is a paper and demonstration on "The Carbon Process," by Dr. Manton, of London and Sheffield (May 28th), and a paper with experiments on "Chemistry and Photography," by Mr. W. A. Brown, of Liverpool (June 25th).

Miss Lil W. Tomkinson's success in taking the silver medal in the Ladies' Class at the Crystal Palace Exhibition has given great satisfaction here. She is the daughter of Mr. W. Tomkinson, Vice-President of the Liverpool Society.

**Brixton and Clapham.**—By an oversight, the name of Mr. F. W. Edwards (President) was omitted from the list of judges at the annual exhibition of work held in the Gresham Hall, Brixton, on the 17th and 18th ult.

## Societies' Meetings.

**Bath.**—An ordinary meeting was held on Wednesday, 29th ult. Mr. Pumphrey presided. The principal feature on the programme was provided by Mr. E. Lambert, who gave a brief discourse on the use of single meniscus lenses for portraiture, illustrating his remarks with examples of work produced as indicated. Among the subjects chosen were some well known local celebrities. An interesting discussion followed, in which the Chairman, Messrs. Braham, Harbutt, and Middleton Ashman took part. It was also decided to discontinue the indoor meetings during the summer, and start the excursions on Wednesday, May 27th. A dark-room candle lamp, "The Champion," was sent for exhibition by Mr. Yabsley. Some defective bromides and ordinary prints of large size were shown by two members, to illustrate faulty material occasionally met with.

**Barrow-in-Furness.**—A meeting was held on the 30th ult., Mr. R. Spencer in the chair. A paper was read by Mr. W. Dunlop on "Enlargements," in which he described the method of producing enlargements by natural light, and gave many practical hints relating thereto. An interesting discussion took place afterwards, in which all the members joined. A letter was read from Mr. J. P. Smith (Treasurer of the Club), offering to give a prize of one guinea for the four best photographs taken by members on the Club excursion to Grange and Cartmel on June 6th. The offer was cordially accepted.

**Belfast.**—The second annual exhibition was opened on the 28th ult., when there was a good show of members' work. The following is the prize list:—Class 1, junior members (who started photography during 1890: James A. Pollock. Class 2 (a), quarter-plate landscape (members): 1, James H. Hamilton; 2, John E. Pim. Class 2 (b), half-plate landscape (members): 1, David S. Keay; 2, John E. Pim. Class 2 (c), any size landscape (members): prize withheld; only one set entered. Class 3, club excursions (members): 1, James H. Hamilton; second not awarded. Class 4, instantaneous (members): 1, James M. Cleery; 2, T. B. Scott. Class 5, enlargements (must be entire work of member): 1, William Strain; 2, James M. Cleery. Class 5 (a), enlargements (may be made by professional member): 1, William Strain; 2, James M. Cleery. Class 6, lantern slides (may be made by professional member): 1, T. F. Bell; 2, James H. Hamilton. Class 7, juniors (confined to residents in Ireland): prize withheld. Class 8, landscape (confined to residents in Ireland): 1, John White; 2, J. D. Lysaght. Class 9, architecture (confined to residents in Ireland): T. F. Bell; 2, John White. Class 10, lantern slides (confined to residents in Ireland): 1, John White; 2, Wm. Swanston. Class 11, animals (confined to residents in Ireland): 1, T. F. Bell. Class 12, landscape (open): 1, John E. Ausin; 2, A. R. Dresser. Class 13, landscape, with figure (open): 1, John E. Austin; second not awarded. Class 14, instantaneous (open): 1, A. R. Dresser; 2, John White. Class 15, enlargements (open): 1, William Strain; 2, J. D. Lysaght. Class 16, lantern slides (open): 1, J. E. Austin; 2, Clarence James. Messrs. William Swanston, Ulster Amateur Photographic Society; W. J. Kilpatrick, Donegal Place; and Robert Welch, Lonsdale Street, acted as judges, and their decisions were marked with great fairness, and gave entire satisfaction. In the evening the lantern slides sent in for competition were shown.

**Birkenhead.**—The annual meeting of the Y.M.C.A. Camera Club was held on the 1st inst. The officers elected were: President, Dr. Stansfield; Secretary and Treasurer, Mr. H. E. Gim; and the Committee, Messrs. T. A. Baty, J. C. Walker, and J. W. M. Richardson.

**Brighton.**—At the meeting on the 28th ult., the President in the chair, Mr. Douglas E. Caugh gave a demonstration of "Photo-Micrography," exposing two plates, and successfully developing same. The results were passed round and considered highly satisfactory. Prints from the negatives taken on the Arundel and Steyning excursions were passed round. Next excursion, Whit-Monday, to Bosham, when the Southsea Society will join.

**Burnley.**—On the 29th ult. Mr. J. Naylor, of Harlesden, gave to the members and friends a most interesting lantern exhibition of various pictures taken by him in England and Wales. These views were very much admired, not only on account of their artistic selection, but also because Mr. Naylor was able to render them so admirably as photographs. He is thoroughly master of the art in which he so greatly excels, and has taken prizes at various exhibitions.

**Croydon Micro.**—At the ordinary meeting on the 1st inst., Mr. J. A. Carter, M.A., in the chair, Mr. D. E. Goddard, F.R.M.S., read a paper on "Elementary Silver Printing." Mr. Goddard, in an interesting way, set forth the whole routine of silver work, from sensitising one's own paper to the finished and mounted picture. A series of pictures showing results to be obtained by printing under different coloured glasses were exhibited. At the conclusion a very lengthy discussion ensued, in which Messrs. J. Weir-Brown, Marriott, and the Chairman took part. Mr. Weir-Brown called the attention of those present to the necessity of having a fixed subject for the Friday meeting nights, whereby instead of simply meeting for ordinary conversation it would be more beneficial to have a short paper and so form a



ground-work for a discussion which would follow. Saturday, May 9th, whole-day excursion to Arundel; conductor, Mr. J. Purser.

**Dublin Y.M.C.A.**—Two practical demonstrations have been given to the members by the Secretary, and two lantern evenings agreeably spent during the past month. A number of excellent slides belonging to two Dublin gentlemen, Mr. Keogh and Mr. Goodwillie, occupied the attention of the Club for an evening, and on the second evening a set belonging to Mr. McCabe, a series of instantaneous studies were shown. Both sets were choice, and were intensely admired by all as guides for their own work.

**Holborn.**—The usual weekly meeting of the Holborn Camera Club was held on the 1st inst., Mr. T. O. Dear (Vice-President) in the chair. Mr. James Sharpe and Miss C. H. Morgan were elected members of the Club. Mr. E. H. Bayston then read an excellent article by Arthur S. Newman, on "Photographic Shutters." In it the writer, in dealing with the various forms of shutters, described the direction of the movement of the shutter, the position in which the shutter was used, and the manner in which the resulting image was affected by alterations in the direction of the movement, or of the position in which it was operated; and in conclusion he thought the following would be found a fair and reasonable answer to the oft-repeated question, "Which is the best shutter?" For speed—one working in or near the diaphragm slot, and having a direct and continuous motion, either rectilinear or rotary; or, if absolute correctness and image is not important, one working just in front of the plate and having a narrow aperture across the blind. For fine definition—one working at or near the diaphragm slot, and opening from and closing to the centre. For studio work or photographing animals—one contained in the camera and easily operated from the outside. For increasing foreground exposure and adaptability to several lenses—one opening up and closing down and fitted on the hood or front of the lens. For evenness of illumination—one having a "direct" motion. Mr. Bayston illustrated the article by showing several forms of shutters now on the market.

**Lantern Society.**—On the 27th ult., Mr. E. W. Bulkeley gave a lecture on "The West Indies," illustrated by Mr. F. York's fine set of lantern slides. This was the last meeting of the present session, and the meetings of the Society will be resumed in October next.

**Liverpool.**—The third ordinary meeting of the twenty-eighth session was held on the 30th ult. Mr. Paul Lange (President) occupied the chair, and there was a large attendance of members. The following were elected members of the association, viz., Messrs. W. R. Melly, W. N. Samuelson, J. Pickering Jones, Thomas Wynne, M. Sanders, C. F. Burne, and W. E. Elsworth. The President exhibited Mr. Friese Greene's hand-camera, enabling as many as sixty consecutive photographs to be taken in one minute. Mr. John Price exhibited and explained Voigtlander's 5 by 4 in. hand-camera lens, also Ross and Co.'s Universal Symmetrical lens, new rapid series; Mr. J. T. Norman Thomas showed a framed picture of a view on a lake, which represented four swans in the foreground, whereas when the photograph was taken there were only two on the water. A number of reasons for the phenomenon were given (some of them amusing), the most likely being that a double exposure had been given, and the swans in the meantime had sailed nearer to the camera. Mr. Thomas S. Mayne (Exhibition Secretary) then made a statement regarding the probable financial results of that undertaking. The accounts, it was expected, would be ready for the meeting on 28th inst. Although the success had far exceeded all expectations, the expenses had been very heavy, but it was anticipated the net profit would be about equal to that of the former exhibition of 1888, which resulted in £250 being handed to the society's treasurer. Mr. John Woolfall explained the progress that was being made to get the long delayed return Boston set of slides completed, viz., "Illustrated Liverpool." The President drew attention to the excursions for the present season, the first of which had been arranged for Saturday, 9th inst (whole day), to Chirk and district. Permission had been obtained from Col. Myddleton Biddulph to photograph the castle, and an excursion would be made to Quinta, another beautiful mansion, a Chatsworth in miniature. Mr. J. A. Furnivel, of Manchester, then proceeded to give a most interesting description of the optical lantern, explaining its various parts, viz., the jets, gas cylinders, etc., and after the lantern had been lighted up, gave some curious sound experiments, which represented waves of sound of the human voice, on the screen; beautiful microscopic slides were also shown, and the adaptability of the lantern to microscopic work explained. As Mr. Furnivel exhibits for Dr. Dallenger, Sir Robert Ball, and Professor Muybridge, his lecture was a most valuable one to those interested or engaged in the working of the optical lantern.

**Loughboro'.**—The annual meeting of this section was held in Mr. W. Clarke's rooms on the 29th ult. The accounts for the year were presented, showing a balance in hand of £5 3s. 11d. The officers were re-elected, and arrangements for the first excursion to Lincoln Cathedral on Whit Monday were made. The list of places to visit for the ensuing season was drawn up. Number of members now on the books, 27.

**North Kent.**—The usual monthly meeting of this Society took place on the 23rd ult. The President being absent through illness, Mr. Hodsoll, A.C.A., took the chair. The chief event of the evening was a lantern exhibition, and the "In and About Columbus, Ohio," set of slides was passed through the lantern by the Hon. Secretary assisted by Mr. Barlow.

**Phot. Soc. of Great Britain.**—At the monthly technical meeting on the 28th ult., Mr. T. Bolas, F.C.S., being in the chair, the chairman said that there was a very excellent collection of slides of animals, and requested the gentlemen present to explain these slides as they were shown in the lantern. A number of slides were from negatives taken at the Zoological Gardens in 1864 by Mr. F. Haes, including one of the quagga, which is said to be nearly extinct, but Mr. Haes had received a letter from Mr. Selous, a well-known hunter who is out in Mashonaland, saying he had seen any number of them. In taking the negatives a double flap shutter was used, giving an exposure of rather less than a fifth of a second. The chairman said that the interest of this series consisted in the fact that they were made by the wet collodion process and they must be looked upon as a very great triumph and as possessing considerable historical interest. A series of slides by Mr. H. Sandland were next shown, including views illustrating Sanger's show passing through Maidstone. Mr. W. Wainwright's slides were next shown; these were taken with a 7½ by 5½ camera and reduced. Mr. J. J. Bright's slides followed; these were all more or less domestic in character and were taken with a Beck camera and 7 inch focus lens. A slide of swans taken by Mr. T. E. Freshwater with a wide-angle lens of 6 inch focus was next shown. Mr. Lewis Medland exhibited a number of slides of animals, followed by a set made from earlier drawings of similar subjects and from old engravings to illustrate the idea given of that form of wild creatures before the photographic era. Mr. W. E. Debenham considered that animal photography had had a great effect upon animal painters. Mr. F. Haes thought that a great number of the positions in Muybridge's book on "Animal Photography" were not suitable for artistic purposes; he also pointed out the advantages of stereoscopic pictures. Mr. Sandland said there were some old pictures that an artist taking advantage of modern knowledge would find it difficult to surpass. Some slides by Mr. Tington Chang were then shown.

**Richmond.**—Meetings were held on the 24th ult. and 1st inst. At the former, Mr. Ramsay in the chair, there was a lantern show. The meeting on the 1st was important and interesting, the subject being "Hand Cameras," and many makers having responded to the Secretary's invitation to send an exhibit, members had the opportunity of inspecting many of the best known types, and in several instances having them explained by representatives of the manufacturing firms. Major Nott showed a camera of his own design of extreme lightness and simplicity which had done good work all the world over, and Mr. Cembrano wound up a most instructive evening by showing a camera designed for use with several different lenses and just specially made for him by Mr. Newman.

**Royal Society.**—At the meeting on the 30th ult., a paper, entitled "Cloud Photography conducted under the Meteorological Council at the Kew Observatory," by Lieut.-General R. Strachey, R.E., F.R.S., and G. M. Whipple, B.Sc., F.R.A.S., Superintendent of the Observatory, was read. The authors described the work which had been in progress under their charge since 1878, illustrating it copiously with lantern slides and photographs, many of which were admitted by those who saw them to be unique and of great beauty, while the methods they employed for determining the heights of the clouds above the earth's surface and the system adopted for finding the rate of motion of the currents of air in which they floated, were commented upon by the President, Sir William Thompson, Lord Rayleigh, the Secretary, and other speakers, as extremely ingenious and being capable of rendering far more accurate results than any others hitherto employed, either at home or abroad. The range of observations in the list of results given by the authors, extended from clouds floating less than one and a half miles high in air moving at seven miles per hour to nine miles above the ground in gales blowing sixty-five miles an hour, whilst the surface wind was only a gentle breeze of five miles per hour. The advantages of a knowledge of such aerial investigations in the preparation of weather forecasts was ably pointed out by Mr. Symons, the Secretary of the Royal Meteorological Society.

**Stockton.**—The last lantern evening was held on the 27th ult., when Dr. Stainthorpe (the President) exhibited a series of charming slides illustrating a three weeks' tour in Scotland. Mrs. Stainthorpe wrote a descriptive lecture of each slide, and very kindly consented to read the same, winning the hearty appreciation of the audience. With such a President, backed up by such an excellent assistant, the Society ought to make headway.

**West London.**—On the 2nd inst., owing to the rain, only four members turned up at the first outdoor meeting at Wimbledon Park.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4660. **Norway.**—I am proposing a tour (fourteen days) to Norway, starting June 9, and shall be glad to hear of a companion (amateur photographer).—G. J. Jones, *Gazette Office, Malton*.

4661. **Gold.**—Is the gold of which the current coin is made sufficiently pure for making into chloride of gold, and if so, how can this be done? If not pure enough, how can the gold be separated from the alloy?—J. W. W.

4662. **Developer for Hand-Camera Work.**—What developer do you recommend me to use for hand-camera work only? I should like one that will give some time, as I only use it occasionally. Please give full particulars for mixing.—W. H. T.

4663. **Enlarging.**—Kindly say what is the best machine at a reasonable price to make good enlargements from quarter-plates, and also to act as a good magic lantern. What price should it be got for.—W.

4664. **Focal Length.**—What is the focal length of a Lancaster's half-plate 1889 Instantograph?—W.

4665. **Pompeian Blue.**—Some time ago was published, I believe in the *AMATEUR PHOTOGRAPHER*, a recipe for making the old Pompeian blue colour. Can any reader refer me to the number in which it appeared?—QUIS.

4666. **Plates, Preserving in Tropical Climates.**—Could some one tell me how dry plates can be preserved for say two to three years in tropical countries without losing any of their properties? Can some one recommend a suitable developer for tropical countries, hydroquinone preferred, simple but efficient, and how must its ingredients be kept? What is the best mode of preserving bromide or Aristotype papers in a hot climate?—R. L.

4667. **Testing Shutters.**—Will some one kindly inform me how to test the speed of a shutter by photographing a spinning bicycle wheel?—PHONE.

4668. **Tour in S. Wales (near Brecon).**—As I am thinking of making a tour round about Brecon, would any brother amateur tell me about the time of exposure, time of day, etc., for mountainous scenery, river ditto, and deep gorges? Also if there is any place I could develop plates, etc.? Any information I shall be deeply grateful for.—PROVINCIAL.

4669. **Obernether Paper.**—Will some kind reader tell me how to prevent Obernether's chloride of silver paper sticking to glass when squeezed on to it in order to give print a glazed surface? I have tried tale without much success.—W.

4670. **Groups.**—Can groups be taken in a studio and out of doors with a single view lens, and if so, and using a full plate lens, what would be a proper distance between lens and sitters for carte, cabinet, and full plate pictures? Also time of exposure with gelatine plates?—ECONOMY.

4671. **North Wales.**—I purpose spending a few days in this district about Whitsuntide, and wish to make Bettws-y-coed my centre. Will any brother amateur kindly favour me with the following information, viz., views, time of day, probable exposure with Iford ordinary and a R.K. lens, and also a single landscape lens, quarter or half plate best? I don't mind walking six or eight miles. Any hints as to lodgings, expenses, and where to stay will be esteemed by.—ECON.

4672. **Names on Negatives.**—Will any one tell me how and with what I can write on a negative so

as to print white such as a name, etc.?—A. H. LLOYD-ROBERTS.

4673. **Pyro Developer.**—Would any of your readers kindly give me the formula for a good reliable pyro developer? I should be delighted to get a really good one. I have an awful trouble with the one I use; the minute I pour it over the negative it suddenly goes black all over. Is this through over-exposure or too much ammonia? The developer I use is as follows:

No. 1.	
Pyro ... ..	20 gr.
Water ... ..	10 oz.
Citric acid ... ..	2 gr.

No. 2.	
Bromide of ammonia ... ..	6 drms.
Ammon. fort. '89 ... ..	1 oz.
Water ... ..	80 "

To develop I use equal parts Nos. 1 and 2.—H. S. B.

4674. **Melrose and Peables.**—Wanted an address in each town where I can change plates about 21st inst. Thanks in anticipation.—E. O.

4675. **Photogravure.**—Will any reader who has tried kindly tell me which method gives the best photogravure from a line engraving? Does the bitumen process give sharper results than are obtained with gelatine (etched in the usual way), or is there any advantage in making an electrolyte plate from a gelatine positive?—JUVENILE.

4676. **Negative for Process Work.**—Can a negative be made from a line engraving, the lines of which vary in depth (from black to pale grey), so as to show quite clear glass for all the lines? I want to produce a negative that will give a print in which all the lines will be equally black.—JUVENILE.

4677. **Lens for Hand-Camera.**—I should be glad if some one could tell me if Lancaster's quarter-plate lens would fit any quarter-plate hand-camera or smaller size.—ALF.

4678. **Brass Work.**—I wish to photograph some art brass work, such as clocks, vases, etc. Should they be taken when they are finished, that is, bright and lacquered, or should they be painted over with some colour, and what colour? What kind of background would be the best, dark or light?—B. A. SMITH.

## QUERIES UNANSWERED.

April 24.—Nos. 4638.

May 1.—Nos. 4647, 4648, 4653, 4654, 4655, 4657, 4658, 4659.

## ANSWERS.

4642. **Carbon Process.**—Monckhoven's "Manual of Carbon Printing," and the Autotype Co.'s "A.B.O. Guide to the Carbon Process," are the only two works. The latter is the simpler and plainer, the former more complete and more useful.—OSIRIS.

4643. **Hand-Camera.**—See answer to 4635 in last week's issue.—PARTHENON.

4644. **Hand-Camera.**—Either the Rover, Lancaster, or Talbot and Eamer's perfected Talmer would suit you. The latter is a capital instrument.—PARTHENON.

4645. **The Moselle.**—If your inquirer knows German he will be able to get pleasant accommodation at roadside inns on the Moselle for about 5s. a day; if he must go where they speak English, it will cost him 8s. The pleasantest way is to make the trip on foot from Treves or down the river by boat, landing occasionally to cut off the river windings. It is said that the Bishop of Treves intends to exhibit shortly the spurious relic called the holy coat of Jesus. The Great Eastern route v'a Antwerp and Luxembourg and back by Rotterdam is the pleasantest.—THE YANKEE SUNFLOWER.

4646. **Names on Negatives.**—To put the name, etc., on a negative, I simply use a small piece of stamp paper about one inch long and one-eighth of an inch wide; wet it, and place it on the edge of the film side so close to the edge that it won't interfere with the printing.—H. S. B.

4646. **Names on Negatives.**—Write backwards on the varnish with ink or black varnish, using a steel pen. It is best to draw two fine lines with a pin point, in order to keep the letters of the same size. Mr. A. Gray, 44, Snow Hill, E.C., has just brought out a process called "Nameit," for naming negatives with type, which is easy to use. He will forward full particulars on application.—CAILLOU.

4646. **Names on Negatives.**—Write on a piece of paper with aniline ink, or print on it with an india-rubber stamp. Place the paper, while still wet, face downwards on the film side of the negative and rub your nail over it several times. Then remove the paper and you will find the name left on the negative. Printer's ink will do it if used before dry, when printed on ordinary paper. But it is a very objectionable practice.—R. A. B. BENNETT.

4649. **Smallest Stop.**—In reply to "Charles," the larger the stop used the better is the atmospheric effect. Therefore use the largest stop which will give sufficient definition; the size of this stop will depend on the subject and the taste of the operator.

As these are variable quantities, it is necessary for every one to make a few experiments for himself; f/18 and f/23 are, however, much used.—J. G. P. VEREKER.

4650. **Camera Case.**—Waterproof canvas is the cheapest and lightest material for a camera case, and is strong enough if not used very roughly. I think the Civil Service Stores charge about 15s. for a half-plate case.—CAILLOU.

4651. **Warwick and District.**—In answer to above, I must say that you could not have chosen a prettier place to take some views. At Warwick there is the Castle, which makes a beautiful view, taken from a dozen or more positions, then the old streets and gate that used to lead to the old town. Be sure and photograph the Castle from the riverside; from the landing-stage of the Rowing Club makes a beautiful view. After you have spent a day in Warwick, turn your attention to Hatton, Kingswood, Solihull, Olton, and Knowle. All these places are simply superb for good landscapes and old buildings.—H. S. B.

4651. **Warwick and District.**—Warwick is full of interesting subjects for photography, viz., the Castle, Leicester's Hospital, the old gateways; then, proceeding to Guy's Cliff, take views of the mill, the house and piers, Gaveston's Monument on Blacklow Hill; then on to Kenilworth to take photographs of the Castle, returning through Stoneleigh take views of the Abbey, the Grove, and Ashow Church, then in Leamington take views of River Walk, the College, and the Jephson Gardens. In Stratford-on-Avon take photographs of the interior and exterior of the church where Shakespeare was buried, the house where he was born in Henley Street, and where he lived, called New Place, also the Memorial Theatre and Anne Hathaway's cottage at Shottery, about three miles from Stratford. Returning to Warwick, visit Charlecote Park and Sherborne Church.—IDA ASTON.

4652. **Intensifier.**—Bichloride of mercury does not readily dissolve in water, but if some of the mercury is left at the bottom of the bottle so as to form a saturated solution, it will bleach the negatives, if they have been freed from hypo. Wash them well after bleaching, and flood with ammonia or sulphite of soda solution, either of which answers equally well.—CAILLOU.

4652. **Intensifier.**—Is "H. S. B." certain he got the bichloride of mercury (corrosive sublimate), as, owing to the atomic weight of mercury having been doubled, there is, I have understood, sometimes a confusion? If he got the chloride of mercury (calomel), it is insoluble in water. He would not be able to dissolve 2 oz. of bichloride of mercury in 6 oz. of water, as it would require 32 oz. of water to make a cold saturated solution, and though it might dissolve in 6 oz. of boiling water it would crystallize out as it cooled. "H. S. B." had better buy some fresh salt and ask for corrosive sublimate. Ammonia answers perfectly for blackening the film, but the negative ought to be well washed after whitening.—J. G. P. VEREKER.

4653. **Colour in Landscape.**—I should say "Aitch Gee" had better use orthochromatic (or isochromatic) plates for his purpose and a yellow screen. He might get a fair representation with ordinary plates and a deep yellow screen, but the colour-sensitive plates would be more satisfactory and require probably a shorter exposure. The depth of colour for the screen depends on circumstances and had better be found by experiment. Use the developer belonging to the plates, modified, if necessary, for the effect desired.—J. G. P. VEREKER.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

S. W. HARRIS.—It is always a risky job removing the varnish from collodion positives. We should advise you to copy it in the camera. If you are careful in lighting it, to avoid the reflections from the glass, you ought to obtain very good results.

G. B. P.—The usual method of removing the gelatine from old plates is to place them in a hot, strong solution of washing soda. Another good plan is to soak the plates in water till soft, and then use a paste made of pumice stone powder and glacial acetic acid; the first is the cheaper. We should find it rather a difficult task to answer your second query, and we make it a rule never to answer anonymous writers. Send your name and address, and we shall be pleased to help you. Will not our advertisement pages help you? Every good worker should prepare his own developer; he knows exactly what he is using then. See our leader of this week.

A. B. C.—We should not advise you to take lessons; you would find full information in our back numbers, which, if you have not got, we will look up, and our publishers will send you on receipt of price.



**V. SUTHERLAND.**—The yellow stains and patches on the prints you send are undoubtedly caused by bleaching of the image by sulphur compounds, formed by the decomposition of the hypo by the acid bath. The dark flashes may be due to old paper, dirty dishes or measures, a trace of hypo. You do not keep your prints in the acid bath long enough; five minutes in one acid bath, followed by the same time in two fresh acid baths, washing for half an hour, and then fixing, is the correct way. The precipitate caused by adding No. 2 to No. 1 proves one of three things—(a) your iron is too strong, (b) the oxalate is too weak, (c) the solutions are too acid. Which is it? Always pleased to help you.

**A. JANE.**—You are quite right; the quantity should be 20 oz., and not 2 oz. See our note this week on home portraiture development.

**W. H. W.**—It is utterly impossible to give you any instructions on the subject in this column. We will give you a special article shortly on the stripping of films, but the photo-mechanical part is quite beyond our limits of space. Send us a stamped addressed envelope, and we will write you.

**H. S. W.**—We will test paper and report in next week's issue.

**WESTPHALIAN.**—We should advise you to send to Chadwick, 2, St. Mary Street, Manchester, who makes a speciality of stereoscopic work; also Lancaster, of Colmore Row, Birmingham, and Underwood, of Granville Street, Birmingham, have good stereo outfits. You could obtain one of Lancaster's whole-plate extensions for enlarging; for prices, see our advertisement pages.

**K. G.**—Professional bellows-makers generally use stiff glue, but a diamond cement would suit your purpose very well. Try the following:—

Gelatin ... .. ½ oz.  
Isinglass ... .. 1 „  
Distilled water ... .. 6 „  
Soak for six hours, occasionally stirring, then add  
Glacial acetic acid ... .. 2 oz.  
And stir well, and melt by the aid of a water bath, or by placing in an outer vessel of hot water. When all dissolved, finally add

Spirits of wine ... .. ½ oz.  
Carbolic acid ... .. 6 drops.  
When required for use, melt by placing the bottle or jar in boiling water.

**ERNEST WINN.**—Your friend in Germany should see Griffin and Sons' new hand-camera, Dine's patent; but if he requires a hand-camera to use with dark-slides or roll-holder, nothing in the market beats Shew's Eclipse camera.

**G. C. J.**—You have omitted name and address. Had you given them we would have written to you.

**JAMES THOMAS.**—Messrs Hart and Co, 186, Fleet Street, E.C., will give you every information with regard to taking out patents.

**G. F. W.**—We note your title, and will take care that our register is corrected.

**J. H. DALLMEYER.**—Thank you for the letter.

**H. E. GORDON.**—We have some notes in the press on the subject you enquire about. Very good results can be obtained by using Vogel's azaline tincture, to be had from Gotz, 19, Buckingham Street, Strand.

**CONSTANT READER.**—(1 and 2) It is difficult to say how much of the accelerator named would act as a poison. There are few chemicals which, when taken in excess, will not cause death; thus the carbonates of potash and soda if taken in larger quantities would act as caustics and destroy the mucous membranes of mouth, stomach, and intestines, setting up inflammation, and thus causing death. The antidotes are—produce vomiting by plenty of warm water, give vinegar or lemon juice, olive oil, the whites of eggs beaten up with water, gruel, demulcent drinks like linseed tea, etc., and give 20 drops of laudanum if in pain. Ferrocyanide of potash is not poisonous of itself, but is classed amongst poisons with all other metallic cyanides, because prussic or hydrocyanic acid can be so easily prepared from it. We therefore may say the accelerator is not poisonous.

(3) According to the Pharmacy Act, 1838, 31 and 32 Vict., c. 121, it is "unlawful for any person to sell or keep open shop for retailing, dispensing, or compounding poisons . . . in any part of Great Britain, unless such person shall be a pharmaceutical chemist or chemist and druggist within the meaning of this Act, and be registered under this Act, and conform to such regulations as to the keeping, dispensing, and selling of such poisons as may from time to time be prescribed by the Pharmaceutical Society with the consent of the Privy Council." As to the anomaly you mention, you must do your best to reconcile practice with the above cited Act of Parliament; it is beyond our powers. Chemists blame the apathetic Pharmaceutical Society, and one or two prosecutions and convictions have taken place but without any result to the general practice.

(4) You will find very full information, with the complete wording of all Acts which apply to chemists, poisons, etc., in the Calendar of the Pharmaceutical Society (2s. 6d.), published at 17, Bloomsbury Square, W.C., or a much more useful book is the "Chemists and Druggists' Diary" of 1891, published at 42, Cannon Street, E.C. The following are the Acts which will help you: The Pharmacy Act, 1852, 15 and 16 Vict., cap. 56; the Pharmacy Act, 1868, 31 and 32 Vict., cap. 121; the Pharmacy Act, 1868, Amendment Act, 1869. The

above Acts do not apply to Ireland, which has separate Acts of 1870 and 1890.

**SEWARD.**—The pyro is all right; send us up a little more of the bromide, though this, we think, is all right also. We should be inclined to put the fault you complain of down to the score of water supply to your house. The prize medal slides were made as follows: Well's Cathedral on Thomas' plate with pyro and soda, Christ Church on Thomas' plate with pyro and ammonia.

**DR. RINGROSE ATKINS.**—Letter dated April 30th, 4 p.m., only reached our office on May the 5th!

**E. GRIFFITHS.**—You will find Messrs. Griffin and Sons, Garrick Street, W.C., most prompt in executing orders for photographic oddments, or the Blackfriars Sensitising Company execute orders for all classes of goods. You would get good detail on their "Celerotype" paper.

**HENRY ELLIS.**—It is impossible to fix an exact date, but we shall hope to do so very shortly.

**E. G. G.**—We will advise you when by post card.

**ARTHUR B. CARRE.**—At the moment we cannot lay our hand upon the letter about the proposed photographic society for Guernsey. Send us a letter for publication, and we have no doubt many of our subscribers might help you to form a society.

**H. C. R. HARLEY (India).**—The photograph you send is perfect in selection, but is, as you say, over-printed. When you get some fresh paper and the temperature is lower, send us over another print. We shall write you by an early mail. By all means open a small deposit account with us, and we will buy and send out photographic oddments to you. We are often doing so for subscribers abroad.

**T. T. S.**—(1) This print is, we should say, from a well exposed rather thin under-developed negative; the print itself is grossly over-printed and over-toned. (2) Correctly exposed negative, print over-toned. (3) Over-exposed. (4) Correctly exposed. (5) Correctly exposed; if you cut off an inch of the foreground you will have a perfect little picture. Shall we return your prints?

**G. PROSS.**—Lancaster's See-saw shutter is just what you want.

**L. PABST.**—You could use block-tin trays for developing with pyro, but not for iron or fixing or toning.

**H. TAYLOR.**—Chlorhydric acid is hydrochloric.

**S. GLAZIER.**—It is always a dangerous practice to tamper with a lens, and we could hardly answer your question without seeing the lens; still, you might try.

**W. W. PARKINSON.**—(1) There is not much choice; if any, No. 2. (2) The exposure meter cannot of course be absolutely and scientifically correct, but it is the nearest approach yet made.

**J. B.**—You are quite correct; the lenses we named are quite sufficient for all work.

**OSCAR.**—The developer depends a great deal upon what you are going to do, positives or negatives. A good all-round developer is:

(A).  
Sulphate of iron ... .. 240 gr.  
Sulphate of copper ... .. 30 „  
Distilled water ... .. 5 oz.

(B).  
Nitrate of baryta ... .. 30 gr.  
Glacial acetic acid ... .. 30 drms.  
Methylated spirit ... .. 5 oz.  
Distilled water ... .. 5 „

Dissolve A and B separately, then mix and filter. A good fixer is:

Cyanide of potash ... .. 120 gr.  
Water ... .. 10 oz.

Jabez Hughes' "Principles and Practice of Wet Plate Photography" is the best handbook; to be had from our publishers, price 1s.

**PERCY VEE.**—Letter by post.

**BEE.**—Your best plan would be to ask the local board surveyor. Place your siter at N.E. end, the glass and blinds should be on the north-west side.

## Monthly Competition.

### RIVER SCENERY.

Title of Photograph.	By whom sent.
Our Village Brook ... ..	L. White
Marlow Bridge ... ..	J. A. Booth
The Stour ... ..	L. C. Elwes
Wolverhampton Lock ... ..	B. Lintott
Whitby Harbour ... ..	T. J. English
In Hebdon Vale ... ..	J. H. Holland
Spring Sunshine on the River	W. H. Walley
Ifley Loch House ... ..	H. Beckley
The Major's Pool ... ..	E. L. Edwards
The Ford ... ..	A. James
The Menai Suspension Bridge	S. J. Bradburn
On the Lyn ... ..	H. Brown
L'andysil Bridge ... ..	H. C. Pritchard
On the Esk ... ..	E. G. Galletly
On the Avon ... ..	H. L. Bridger
A Misty Morning ... ..	E. W. Alabone
Rice Bridge ... ..	Miss Hardman
A Double-Keefed Mainsail ... ..	J. Harriman
On the Lea ... ..	H. Nye
On the Lyn ... ..	A. R. Berry
A River in Assam ... ..	J. A. Macadam Assam
River Wear ... ..	W. C. Blackett

Rothsay Bay ... ..	W. W. Ritchie
On the Trent ... ..	W. Thompson
The Old Bridge ... ..	Miss Watson
On the Porter ... ..	P. W. Maugham
The Barle ... ..	G. Brittain
Flint Mill ... ..	Mrs. Benyon
On the Arun ... ..	C. A. Irvine
Ye-ho for the Ferry ... ..	J. C. Jwley
A Haunt of the Dragonfly ... ..	C. Muller
Weir Bridge ... ..	O. F. Kelly
Ashton Weir ... ..	Miss C. M. A. Cresswell

On the Dee ... ..	E. Winn
The Trent ... ..	J. Thompson
A Mountain Torrent ... ..	Miss H. Annesley
Waterfall, Meanwood ... ..	F. W. Plews
Mill on the Stour ... ..	R. W. Copeman
Beezeley Falls ... ..	J. T. Alty
On the Lyn ... ..	J. J. H. Sanders
On the Dart ... ..	W. H. Ash
Beaver Bridge ... ..	E. G. Jones
A Gloomy Sunset ... ..	P. Ennis
On the Conway ... ..	J. G. Jones
On the Churnet ... ..	H. Meynell
Horning Ferry ... ..	E. R. Ashton
On the River Onny ... ..	W. G. Perry
Under the Willow ... ..	W. D. Perrins
On the Adun ... ..	A. L. Soiller
The Upper Roding ... ..	H. W. Sanford
River Cherwell ... ..	A. Dietschi
On the Dee ... ..	J. Oswell Bary
On the Kilkeel River ... ..	G. A. Carruthers
On the Brent ... ..	J. H. Thornton
Sunning Loch ... ..	R. Malpas
A Peep near Padstow ... ..	E. Griffiths
Mill on Turret ... ..	H. Faulkner
By the Murmuring River ... ..	J. G. Paterson
A Bend in the River ... ..	E. B. Wain
On River Dargle ... ..	J. White
A Breezy Afternoon ... ..	T. Glazebrook
Oned Chiffa, Chiffa Pass ... ..	Miss Dillon
Buda Peth ... ..	Miss Stone

## Quarterly Examinations in Photography.

### QUESTIONS.

16. An exposed plate will be forwarded to you; develop the same, and send a silver print from it with statement of method of development, etc. (No further information will be given as to exposure, etc., and the negative must be retained for future work.)
17. Define the term "Amateur" as applied to photographers, and state clearly your views on the subject. (350 words allowed.)
18. Forward a short article upon some "Holiday Resort," complying as far as possible with the rules laid down in "Our Views," p. 310, May 1st, 1891. (350 words allowed.)

(Latest Day for Answers—May 18th.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, OREED LANE,  
LONDON, E.C.



## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. **Halfpenny Stamps preferred.** A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

**Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.**

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

"Amateur Photographer," etc. — AMATEUR PHOTOGRAPHER, vols. ix. to xiii., each in reading case; for 7s. 6d.—No. 149, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

AMATEUR PHOTOGRAPHER, 90; "Photographic News," 26 numbers (consecutive); Hunt's, Marion's, Hepworth's, and Lancaster's "Photography," two "Year Books," 8s. 6d.; as new. — Knight, High Street, Godalming.

**Burnishers.**—Lancaster's half-plate burnisher, perfect order; cost 21s.; price 15s. — H. Kinnaird, 171, Caledonian Road, London.

Useful burnisher for sale; 6s.; nearly new.—Peirce, Gonville, Blackwater Road, Eastbourne.

**Cameras, etc.**—Camera, half-plate, new, reversing swing-back, compound front, rack and pinion adjustment, one double dark-slide; cash only.—Head, 30, Chapel Road, West Norwood.

Stirn's Secret camera, nickel-plated, six pictures on plate, scarcely used; 15s.—W. Cook, 43, Binstead Terrace, Leeds.

Superior quarter-plate mahogany studio camera, double back, and stand; 15s. 6d.; or exchange for 9 in. burnisher. — Fowler, Park Lays, Stratford-on-Avon.

4½ by 3½ Gale's Cyclone camera, with three double dark-slides and waterproof bag, in good condition; cost £6 10s.; price £5.—No. 155, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Watson's 6½ by 3½ stereo camera, with three double dark-slides, in leather case, with lock and key, in splendid condition, cost £8, price £6; also Ashford tripod stand, price 15s.—No. 154, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lancaster's quarter-plate Le Merveilleux, complete, two double backs, rebounding shutter, and one of Tylar's metal slides; what offers?—No. 153, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Slide-making camera, half (no lens), slide carrier (double), half dark-slide; 10s.; or offers.—Howard, 16, Perryn Road, Acton.

Useful to cyclists, Mayfield's 3½ square ebonite Pocket camera, backs, shutter; 27s. 6d.—Summers, jun., 23, Cheapside, London.

Shew's Eclipse camera, brass-bound, lantern plate size, with three beat double backs, pocket rest, and folding leather case, the whole as new; cost £7 9s. 6d.; price, lowest, £5; approval if deposit; will forward above to Editor for approval if required.—No. 152, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Shew's quarter-plate Eclipse camera, four double backs, finders, etc., complete, equal to new; also light bamboo stand and leather case; cost £6 16s.; the lot for £4 15s.—A. Parker, Uttroxteter.

Best half-plate long-extension bellows camera four slides, 4-fold stand, £5 5s.; also quarter-plate bellows camera, four slides, £3 3s.—L. 87, Cobden Road, South Norwood, S.E.

**Cameras, Lenses, etc.**—Lancaster's latest pattern extra-special half-plate, brass-bound, triple extension camera, three brass-bound double slides, Universal top, sliding tripod, splendid rapid rectilinear lens, iris diaphragm, guaranteed as new; cost £9; sell £3 15s., or without lens, £5 5s.—Address, G., 2, Crafton Terrace, Kingstown.

Genuine bargain to any gentleman requiring a complete and first-class make outfit. Camera, 7½ by 5 (by Meagher), with extending front, rising and sliding ditto, with partition for stereos, reversing swing-back, and all the latest improvements, three double dark-slides, rapid rectilinear lens (by Taylor), extra strong tripod, all new last autumn; also the following sundries: quarter, half, and 7½ by 5 printing frames, paper mache and iron enameled dishes, glass shapes, zinc vignettes, burnisher, background, measures, light-tight boxes, carriers, focussing piece, view-finder, and cases, condition guaranteed as new, in one lot only £12; camera and slides alone cost £10 15s.—G. Sanders, 30, Seymour Street, Liverpool.

Whole-plate long-extension camera, three backs, best make, R.R. lens (iris), Kershaw shutter, 3-fold stand, all in mail-cloth case, as new; £11; list price £15 5s. 6d.—Dr. Cecil Shaw, Hon. Sec., Ulster A. P. Society, Belfast.

Lancaster's half-plate Instanto, three double dark-slides, tripod, lens and shutter, with solid leather bag, 80s., cost 134s.; Watkins' actinometer, 10s.—Jones, 83, Milton Street, Middlesex.

Lancaster's quarter-plate Le Meritoire, with lens, double dark-slide, stand, focussing cloth, and leather-bound case, as good as new; price 35s.—E. A. Yates, Percival Street, Oldham.

Half camera (by Meagher), extends full 17 in., two double slides, with special baskets, lined with waterproof material for carrying, £4 10s.; Dallmeyer's rapid rectilinear, 6 by 5, £3 10s.; Dallmeyer's W.A. landscape lens, 7½ by 4½, £2 10s.; Kershaw shutter, fits hood 1½ and under, 10s.; all in good condition.—A. Spiller, Hillside, Hampstead Hill Gardens, London, N.W.

Rouch's whole-plate portable leather bellows camera, double extension, double swing back, reversing rack, rising front, in new condition, one double mahogany dark slide, book form, and ash folding tripod, R.R. lens, covering 10 by 8, the lot for £6 10s.; also whole-plate portrait long-focus lens, covers 12 by 10, only 35s.; also half-plate outfit, £1.—Knight, Seaford, Sussex.

**Camera Case.**—Will sell for 9s., carriage paid, waterproof case, to hold complete half-plate outfit.—4, Eaton Street, Hanley.

**Dark Slides.**—Six full-plate brass-bound McKellen's dark-slides, new; best cash offers.—S., 52, Greenhill Street, Manchester.

**Hand-Cameras, etc.**—No. 1 Kodak, with leather case, quite perfect, loaded with 100 exposures; price £2 15s.—R. Seymour Benson, Stockton-on-Tees.

Kodak for sale, cost £5 5s., about 40 undeveloped films; price £3.—Dr. Hodges, Park Road, Gloucester.

Samuel's half-camera, quarter-plate, carry one dozen plates or films, achromatic lens, time and instantaneous shutter, quite a bargain, almost new; 41s.—Robson, Eye Infirmary, Exeter.

Quarter-plate Diamond detective camera and case, nearly new; price 30s.—Bennett, Walton Lodge, Oxford.

Shew's famous quarter Eclipse hand-camera, six double backs, finder, bamboo tripod, all perfect; cost £8; price £1 10s.—B. 43, St. Helens, Lancashire.

**Lantern.**—Mahogany-body optical lantern, 4 in. condensers, blow-through jet, brass front, double pinion, lens, and carrier, quite new; price 9s.—268, Intake Road, Sheffield.

**Lenses, etc.**—Cabinet portrait lens, nickel-plated, 25s.; Inkpen's walking-stick tripod, 7s. 6d.—J. C., 65, Albert Road, Southsea.

9 by 7 R.R. lens, good make, nearly new; price 30s.; specimen photographs can be seen.—Adams, 34, Courthouse Road, Haverstock Hill.

Whole-plate rapid rectilinear lens, f/8; bargain, 35s.—14, George Street, Stroud, Glos.

Lens, rectilinear, 7 by 5, covers grand to edges, hood, stops f/8 to f/32; 25s.; approval.—Adams, Hermitage Mews, Stamford Hill.

Two first-class rapid rectilinear lenses. Waterhouse stops, quite new, perfect definition; quarter-plate, 17s. 6d.; half-plate, 23s. 6d.; approval.—M., 73, West Clowes Street, Salford.

Portrait lens, quarter-plate, good definition, 15s.; dark-room lamp, new, 5s. 6d.; approval.—Drinkwater, Malvern Hill Road, Birmingham.

Half-plate R.R. lens; 27s. 6d.—Gregg, Water Street, Egrement, Cheshire.

Ross' half R.R. lens, almost new; 75s.; or exchange Dallmeyer's whole-plate W.A. doublet.—H. Cooke, 3, Weekday Cross, Nottingham.

Wide-angle doublet lens (Ross, London), 3 in. focus; cost £4; sell for £2, or exchange for hand-camera.—253 Intake Road, Sheffield.

Suter C3 lens, in leather case; cost recently 104s. nett; take 84s.—Rev. Christie, Newtownstewart, Ireland.

Ross' 4 in. portable symmetrical, good condition; 37s. 6d.; no reasonable offer refused.—Rev. Henning, 18, Whitehead's Grove, Chelsea.

**Roll-Holder.**—Eastman's roll-holder, whole-plate, little used; £2 10s.—M. Powell, 76, Springfield Road, Preston Park, Brighton.

**Sets.**—Lancaster's quarter-plate outfit, nearly new, 30s.; induction coil, 2 in. spark, commutator, vacuum tubes, brass model engine and boiler; offers. 190, Heyside, Royton.

Lancaster's half International set, complete with

R.R. lens; approval, cash.—Pridden, Jeweller, Weymouth.

Camera, full-plate, best quality extension, for sale, fitted with every convenient appliance, two lenses (Ross), four double dark-slides, carriers, Eastman's frames, tripod, in two portable strong leather bags, instantaneous shutter, and complete outfit, with dishes, printing frames, lamp, etc.—Half-plate do., London Stereoscopic Co.'s best make extension and outfit. Owner will initiate, by correspondence, any purchaser unacquainted with photography into its rudimentary mysteries.—Apply, Excelsior, Florence Villa, Portswood, Southampton.

Watson's half-plate set, light Tourist camera, three double dark-slides, two fronts, R.R. lens, iris diaphragm, Thornton-Pickard shutter, sliding tripod, leather case, focussing cloth, glass, and level, new last season; cost £15 15s.; price £8 15s.—Address No. 150, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Shutters.**—Optimus half-plate plunge shutter, only used twice, perfect condition, owner requires larger; price 23s.—Adams, 34, Courthouse Road, Haverstock Hill.

**Slides, Lantern.**—Advertiser wishes to exchange lantern slides for others of equal quality.—Smitu, Yewdale, Huyton, Liverpool.

200 best photographic lantern slides, travel, scientific, humorous, etc., to be cleared at half-price, particulars free; also a splendid Tourist's telescope, 2 in. objective, in sling case, almost new, cost 63s., sacrifice for 32s. 6d.—T. Hall, Pinfold Lane, Lancaster.

**Sundries.**—Complete plant and appliances for colotype, nearly new; price £10 10s.—Apply Colotype, care of AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

For sale or exchange, plated revolver and a telescope.—No. 148, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Bargains, 500 cream enamel cabinet mounts, red line, 2s. 100, lot 9s.; 500 ditto c.d.v., 1s. 100, lot 4s. 6d.; whole-plate single lens (Lawley, London), 10s. 6d.; exchange half-plate wide-angle rectilinear.—J. Barrack, Central Buildings, Kendal.

**Tripod.**—Three-fold tripod (by Morse), with case, suit half-plate camera, new; 15s.; cost 28s. 6d.; a bargain.—W. J. Barker, Woodley View, Leeds.

## WANTED.

**Cameras, etc.**—Half-plate camera, complete, with latest improvements, cheap for cash.—Fullest particulars to T. Lewis, Tebbury, Gloucestershire.

**Cameras, Lenses, etc.**—Who's and half plate cameras, lens, stands, printing frames, etc., posing chair, etc.; approval.—Price and particulars to A. Macdonald, Myra Street, Keswick.

Quarter-plate Lancaster's Instantograph, rectilinear lens, or other good camera, with dark-slides and stands, on approval; must be cheap; or exchange detective hand camera and cash.—F. Jermyn Smith, Peterboro.

7½ by 5 or 8½ by 6½ long-extension camera and slides, also lens; approval; deposit; full particulars.—Shepherd, Ripley, Derby.

**Dark Room.**—Amateur wants to rent a comfortable dark-room, neighbourhood of Charing Cross preferred; state terms.—No. 151, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Dark Slides.**—Quarter-plate dark-slides for Lancaster's International.—Summers, 148, Staunstead Road, Forest Hill.

**Hand Cameras, etc.**—No. 3 Kodak, Junior, must be perfect and loaded.—R. Seymour Benson, Stockton-on-Tees.

No. 3 Junior Kodak camera, No. 2, and No. 1; state lowest cash price.—Thos. Illingworth and Co., Kodak Finishers, 35, Sherriif Road, West Hampstead, London.

Shew's Eclipse hand-camera, cheap.—W. 10, Pembroke Road, Notting Hill.

Quarter-plate Shew's hand-camera, in good condition.—Naylor, Warwick Road, Basing.

Swinden and Barp's detective camera, in good condition, cheap for cash.—A. C. G., 47, Huskisson Street, Liverpool.

Facile hand-camera, with rapid rectilinear lens.—Dyer, Elmfield, Ilfracombe.

**Lantern.**—A good enlarging lantern, which will also act as good magic lantern.—Waller, Banagher, Ireland.

**Lenses, etc.**—Voigtlander's rapid Euryscope, No. 5 or 6, or No. 4 or 5 Suter's A. applanatic for portraits and groups; state lowest price for cash and condition.—Vincent, 61, Dunca Road, Southsea.

**Shutter.**—Shutter, 2½ in., either Thornton-Pickard, Kershaw, or other good.—Moussay, Savile Park Halifax.

Instantaneous and time shutter, 3 in., modern 10 by 8 camera, studio stand, with rack adjustment, Ashford's 6 in. tripod; approval; deposit.—Studio, Beacon, Camborne.

**Sundries.**—Three or four dishes, not less than 15 by 12, for cash.—J. E. Blam, Yarm.

Really good toning bath for Aristotype prints; send formula for six stamps.—Deegan, Banagher, Ireland.



## NOTICES TO SUBSCRIBERS.

*Subscriptions must be prepaid.*

UNITED KINGDOM.....	Six Months, 5s. 6d.....	Twelve Months, 10s. 10d.
POSTAL UNION .....	" " 6s. 6d.....	" " 12s. 0d.
INDIA, CHINA, ETC. ....	" " 7s. 6d.....	" " 15s. 3d.

## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.  
NOTE.—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.  
NOTE.—To ensure insertion, all Communications should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.**—Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

# THE "AMATEUR PHOTOGRAPHER" COMPETITIONS, 1891.

The Dates given below are those upon which the Competitors' work must actually be received

JUNE	1	...	Monthly Photographic	...	...	...	VILLAGE LIFE, FARMING, ETC.
"	17	...	Public Schools	...	...	...	Particulars to be announced.
"	30	...	Photography at Home	...	...	...	Particulars to be announced.
JULY	1	...	Monthly Photographic	...	...	...	OUT-OF-DOOR FIGURE SUBJECTS, GROUPS, ETC.

Further Particulars, Entry Forms, etc., will be sent on receipt of stamped envelope.

Address: THE EDITOR, "AMATEUR PHOTOGRAPHER,"

1, CREED LANE, LONDON, E.C.

**NOTE.**—ALL APPLICATIONS TO BE ENDORSED, "COMPETITIONS."

## KING'S POPULAR HAND CAMERA.

Defies Competition in Price, Quality, and Artistic Results.

No. 1, **25/-**

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No. 1.—Holds 12 quarter-plates automatically changed by one movement, made in best mahogany, Time and Instantaneous Shutter, Two Finders, Vertical and Horizontal. No. 2.—Same as No. 1, but with extra View Finder, same size of plate. All Amateurs should order at once for Whitsun Holidays. No need to take out ordinary Camera, as with this you can see exact picture you are taking. CATALOGUE TWO STAMPS.

**E. A. KING, Works, 3, Chester Terrace, Eaton Square, S.W.** (3 minutes from Sloane Square, 5 mins. from Victoria District Ry.)

Before placing your orders, write for particulars of the

## "CLIMAX" HAND CAMERA,

Particulars from JOHN WATSON, 34, Grainger Street, Newcastle-on-Tyne.

No Black Bags, Double Dark Slides, or Separate Chamber. Approximate size, 10 by 4 by 4½.

"WATSON & JOHNSTON'S" PATENT. True automatic changing, carries 18 ¼-plates, smallest and most portable. You will be sorry if you purchase before seeing the "CLIMAX." One movement only. It is impossible to describe its simple movement. It requires seeing to be believed. Competent judges declare it to be the very acme of simplicity.

**NOW READY. Price 2s.**

## "THE PHOTOGRAPHIC QUARTERLY."

CONTENTS FOR APRIL, 1891.

With Woodburytype Frontispiece, and Eight General Illustrations.

THE CAMERA'S SERVICE TO ART. By JAMES STANLEY LITTLE.

HUSBAND'S PAPYROTINT PROCESS FOR LITHOGRAPHY IN HALFTONE. By Capt. A. M. MANTELL, R.E.

MEMORY AND IMAGINATION, By H. ERNEST MURCHISON.

*Illustrated.* Pure Photography—Photography Aided by the Brush.

THE RELATION BETWEEN ABSORPTION AND SENSITIVENESS OF SENSITIZED PLATES. By J. J. ACWORTH, Ph.D., F.I.C.

*Illustrated with Diagrams.*

IDEALISM, By FRED. DAVIS.

THE TEACHINGS OF A CHEMICAL ACTINOMETER. By CHARLES A. KOHN, Ph.D., B.Sc.

ROUND EUROPE. By CYRIL S. COBB, B.C.L., M.A.

*Illustrated.* Constantinople from the Golden Horn: Stamboul Side—Constantinople from the Golden Horn: Galata Side—Odessa: The Fort—Kieff: Cathedral of St. Sophia—Kieff: Church of St. Michael—Kieff: Cathedral of the Assumption.

SUMMARY OF EVENTS INTERESTING TO PHOTOGRAPHERS. By the EDITOR.

FRONTISPIECE.—"THE LOVE LETTER." By JOHN E. AUSTIN.

LONDON: HAZELL, WATSON, & VINEY, 1, CREED LANE, LUDGATE HILL, E.C.



## COMPETITION.

TWO GUINEAS are offered for each of the best series of 5 PHOTOGRAPHS BY AMATEURS illustrative of either of following places:—

Edinburgh, Dublin (and vicinity), Belfast, Irish Scenery, Glasgow (and Clyde), Bath, Brighton, Torquay, also of Still Life, *apropos* of either, River, Sea, or Country.

Not more than two principal Architectural Views admissible, the other three to be typical scenes, artistically and unconventionally treated.

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Advertiser reserves the right of publishing such as may be accepted.  
Those unaccepted returned.

## THE "NORTHERN GARDENER" PRIZE COMPETITION.

The Proprietors of the  
"Northern Gardener," 64, Fountain Street, Manchester, offer

£2 for the best Six,  
£1 " " Three,  
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Unmounted Photographs of Gardening Scenes (in Private Gardens or Public Parks), Porches, Windows, etc., of a picturesque character, Plants, Flowers, etc.

Competitions to reach the above address not later than June 27th, 1891.

All Competitive Prints, which must be original, to be the property of the Proprietors of the "Northern Gardener," who reserve the right to publish same. The Prize takers will be announced in the *Northern Gardener* of July 4th, 1891.

## "AMATEUR PHOTOGRAPHER" COMPETITIONS. PHOTOGRAPHY AT HOME.

PRIZES FOR PAST WINNERS:

One Gold, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal. One Silver, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal,  
One Bronze, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal.

OPEN TO GENERAL COMPETITORS:

Two AMATEUR PHOTOGRAPHER Gold Medals. Two AMATEUR PHOTOGRAPHER Silver Medals. Two AMATEUR PHOTOGRAPHER Bronze Medals.

Certificates will be placed at the disposal of the Judges should they see fit to award them.

All Photographs must be endorsed "Photography at Home," and sent, on or before Tuesday, the 30th of JUNE, 1891 addressed to—

The Editor, AMATEUR PHOTOGRAPHER,  
1, Creed Lane, London, E.C.

## PUBLIC SCHOOLS COMPETITION. OPEN TO BOYS UNDER SEVENTEEN YEARS OF AGE.

Class I. Landscape. "Amateur Photographer" Silver and Bronze Medals.

II. Portraits, including Groups " " "

III. Animals " " "

IV. Architecture " " "

NOTE.—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date, June 17th.

The Largest Sale of any PHOTOGRAPHIC WASHER in the World!!!

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IMPROVED PATTERN.

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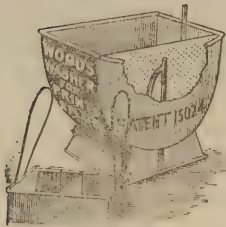
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"Washes prints with less attention and more thoroughly than any we have yet seen."—*Photography*.

"I find prints and plates are free from 'Hypo' in the time you claim—a fact I should not have credited without actual trial."—W. JEROME HARRISON, F.G.S., Author of "A History of Photography," and "Photography for All," etc.

"Your Washer works splendidly."—FRANK M. SUTCLIFFE, Whitby.

JAMES WOOD, Chemist, 18, Northbrook St., LIVERPOOL.



## Ladies' Second Photographic Competition PRIZES.

FIRST PRIZE. SECOND PRIZE. THIRD PRIZE.  
GOLD MEDAL. SILVER MEDAL. BRONZE MEDAL.

(These Medals, of the smaller series, will be appropriately mounted as Brooches or Pendants if desired).

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Portraiture or Figure Study.

NOTE.—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C. Latest date August 22nd.



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For producing Names, Numbers, or Descriptions on Photographs.

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TO H.M. GOVERNMENT, OXFORD, CAMBRIDGE, AND LONDON UNIVERSITIES, Etc., Etc.

For Hand Cameras see "Crouch's Presto." Carries 24 plates, instantaneous change, no bags. Full particulars on application.

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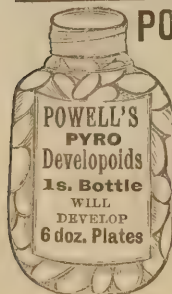
The "BRITISH JOURNAL OF PHOTOGRAPHY" says:—"It is a highly convenient form in which to keep PYRO, and we can strongly recommend it."

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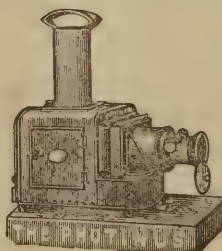


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# The AMATEUR PHOTOGRAPHER

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Telegraphic Address: VINEY, LONDON

Office: 1, Green Lane, Ludgate Hill, London, E.C.

No. 345. VOL. XIII.]

FRIDAY, MAY 15, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

**NOTE:** Whit Week: Members of the Editing staff will be "At Home" on Tuesday from Eleven till One and from Two till Five o'clock, when they will give advice upon all photographic matters and be glad to see all visitors.

**OUR VIEWS.**—"Photography at Home" Competition—Mr. Walter Sickert on Photography and Painting—The Hackney Photographic Society—The Lady's Pictorial will Reproduce the Prize Photographs in AMATEUR PHOTOGRAPHER Ladies' Competition—M. Guntz on the Subhaloids of Silver—Swiss Scenery—The Naval Exhibition Electric Light v. Sunlight—The AMATEUR PHOTOGRAPHER'S "Tourist's Index"—Photographic Societies and their Work—The Birmingham Photographic Society—Prize for Photographs offered by the Art Committee of the Bisteddord—Photographic Methods of Obtaining Polychromatic Impressions.

**LEADER.**—Home Portraiture.

**LETTERS.**—Society at Streatham (Harold Senior)—Explosion of a Gas Regulator—(Henry D. Brandreth)—What is an Amateur? (Reginald A. R. Bennett)—Stereoscope (Stereo).

**COMMUNICATED ARTICLES.**—Studies in Art for Photographers (Lambert)—Photo-Micrography (Pringle).

**NOTES.**—Our Contemporaries—Thursday Evenings at the Camera Club—From Edinburgh.

**THE PICTURE GALLERIES.**—Royal Society of Painters in Water Colours—Mrs. Aillingham's Drawings—Raphael's Cartoons.

**APPARATUS.**—Powell's Pyro Developers—Papier Vermeil—The "Kohn" Time Exposure Magnesium Lamp.

**REVIEWS.** Colour Measurement and Mixture.

**SOCIETIES' MEETINGS.**—Ashton-under-Lyne—Belfast Y.M.C.A.—Bournemouth—Brechin—Brixton and Clapham—Croydon—Holborn—Ireland—Lewisham—Liverpool—Liverpool Y.M.C.A.—Lowestoft—Morley and District—North London—North Middlesex—Richmond—Sydenham.

We would remind our readers that entry forms are ready for the "Photography at Home" Competition, which takes the place of "Home Portraiture," and on receipt of stamped addressed envelopé a form will be sent. In this competition portraits, figure studies, groups, tennis parties, etc., are eligible. It is, as a matter of fact, a "go-as-you-please" competition, and one which we hope will be largely supported. The winners of prizes in the AMATEUR PHOTOGRAPHER "Monthly Competitions" are eligible in the class "Open to General Competitors." Past prize winners of the AMATEUR PHOTOGRAPHER Gold Medal must enter in the Special Class, in which gold, silver, and bronze "Niepce" or first AMATEUR PHOTOGRAPHER Progressive Medals will be awarded. The last date for sending in has been fixed for the 30th of June.

THE *New York Herald* is responsible for the statement that a company has been formed at Cleveland, Ohio, with a capital of a million dollars to work a patent for taking photographs at a distance by means of electricity.

MR. WALTER SICKERT has addressed the following letter to the Editor of the *National Observer* :—

"I have waited to see whether one of the art-critics who have noticed the exhibition of sketches of India by Mr. Menpes would make the slightest allusion to the fact that they owe their drawing almost entirely to the use of instantaneous photography. It is hardly possible that they should not know this. It is the *secret de Polichinelle* of the studios. Any one who cares to examine the sketches now at Messrs Dowdeswell's gallery can see this for himself. Contrast, for instance, the accuracy of contour of the architectural details, which can be photographed, with the helpless treatment of skies and trees where the camera notably fails to supply sufficient guidance. I do not propose to enter into discussion with those—and I believe there are many—who defend the use of photographs under paintings on either artistic or commercial grounds. I would suggest, on the other hand, that a critic fails in an obvious duty to those whose drawing is the result of special gifts of brain and eye and hand, arduously and painfully cultivated, when he discusses such an exhibition as Mr. Menpes' without premising that his initial drawing has throughout been done for him by a machine. Beyond this, that he fails in his duty to the public, who pay him for an expert opinion. The public buy pictures, among other motives, because they think they will rise in value. They rise in value, among other cause, if the artist progresses in power; and an artist who spends the best years of his life in colouring or copying tracings of instantaneous photographs does not progress."

We will express no opinion upon the subject, but it would be interesting to hear what others have to say; and perhaps some of our readers who are artists and have seen Mr. Menpes' work will give us their views upon this alleged use of photography.

MR. W. FENTON JONES, the Hon. Secretary of the Hackney Photographic Society, in thanking us for our comments upon his work, and that of the society which he has done so much to advance, says: "Next session we intend starting the meetings at 8 to 8.15 for minutes, after which half an hour will be set aside for the criticism of members' work, and thus ensure mutual benefit. We know for a fact that in some societies members are afraid to bring up their work, but at Hackney they evidently wish to encourage beginners by friendly criticism."

It will be remembered that last year the *Lady's Pictorial* reproduced the prize photographs in the "Ladies' Competition." We are very pleased to say that the Editor has asked us to reserve them for his paper this year. We shall be glad to send entry forms to our many lady subscribers upon receipt of stamped addressed envelope.

A VALUABLE paper has been contributed by M. Guntz to the current number of the *Comptes Rendus*, in which he



proves the existence of the subhaloids of silver, the existence of which, though strongly suspected from a theoretical standpoint, has never yet been satisfactorily proved. We have already noted the formation of the subfluoride of silver,  $\text{Ag}_2\text{F}$ , which M. Guntz obtained about nine months ago by electrolysis of a solution of silver fluoride. By the action of the chlorides of carbon, silicon, and phosphorus on the crystalline subfluoride, comparatively pure subchloride,  $\text{Ag}_2\text{Cl}$ , of deep violet tint is formed. The subiodide  $\text{Ag}_2\text{I}$  was prepared by passing gaseous hydriodic acid over the subfluoride, and the subsulphide  $\text{Ag}_2\text{S}$  was obtained by the action of sulphuretted hydrogen. The suboxide of silver,  $\text{Ag}_2\text{O}$ , itself was obtained by heating the subfluoride with aqueous vapour. M. Guntz proposes to compare his subsalts with those prepared by the action of light on the several haloid salts, and we may thus hope for some further and authoritative light upon the vexed question of the latent or invisible photographic image, and the coloured product obtained by printing out with chloride of silver.

—♦♦♦—

THE glories of Switzerland are every year becoming more familiar to travellers, who will enjoy the extremely clever pictures of Mons. G. Loppé. This artist is now exhibiting at the Fine Art Society seventy-six choice examples of the painstaking and artistic way in which he has studied the Alps. To those who know Zermatt, the studio of M. Loppé will recall delightful experience of this artist's work. In his determination to picture Mont Blanc with fidelity, he made the ascent sixteen times, and we are rewarded with a splendid view of sunrise upon the "King of Mountains." The depth of blue in the furrows of the Mer de Glace, the rose-pink of dawn upon the grim Matterhorn, the glow of sunset in the Valley of Chamonix; all these are pictured by M. Loppé with marvellous skill. As a specimen of smooth painting we specially commend a view of Mont Pilatus from Stansstadt. Even while we stand gazing at the various canvases, there come to mind the lines of Matthew Arnold:—

"Swiss chalets glitter'd on the dewy slopes,  
And from some swarded shelf, high up, there came  
Notes o' wild pastoral music—over all  
Ranged, diamond-bright, the eternal wall of snow."

—♦♦♦—

If we are to believe the daily papers, we have no longer any need of the sun; this luminary's nose has been put decidedly out of joint. Photographers, both amateur and professional, will rejoice, no doubt. We shall soon only have to press the button and obtain a light compared to which the sun will be nowhere. We refer to the following passage which refers to the Naval Exhibition at Chelsea:—

"The New Eddystone is an exact model, so far as size and outward appearance goes, of the great beacon-light designed by Sir Jas. Douglass, that stands upon the rocky ledge, the outmost landmark of England's shores. It is 170ft. in height to the top of the lantern, and there is a passenger lift built within the iron inner structure, by means of which visitors will be enabled to ascend to the gallery encircling the light. At night a mighty 5,000,000 candle power electric lamp will illuminate the grounds from the summit of the lighthouse."

The italics are ours. We have not yet had an opportunity of seeing this wonderful light, but according to Bouguer sunlight is equal to 62,177 wax candles of the normal standard. Anyone will now be able to reckon out that this "mighty 5,000,000 candle power electric lamp" is more than eighty times brighter than the sun. We have begun to consider whether we shall not lay in an extra stock of plates, as we shall be able to do some good work now, without any consideration of night. But won't there be a rush for rapid shutters! The candle power of the arc-light varies from 2,000 to 6,000 candles, so that we should require over 800 arc-lights of 6,000 candle power.

IN another column we give the AMATEUR PHOTOGRAPHER'S "Tourist Index," which we venture to think will be of considerable value to our readers. The reference is made either to an article ("Holiday Resorts and Photographic Haunts"), a letter, or an answer to queries in the AM: PHOT: There are references to some 250 places, and it only remains with our readers to make the "Tourist Index" cover a thousand centres of photographic interest. We publish the list for two reasons, first, in order that intending contributors shall know what places of interest have been written upon in the columns of the AMATEUR PHOTOGRAPHER, and secondly, because subscribers using our "Dark Rooms" may be glad of the opportunity of securing a copy of the AMATEUR PHOTOGRAPHER which contains an account of the district they are visiting.

We shall be glad of short MSS., about 500 to 1,000 words, descriptive of any good centre for photographic work. Our readers in the provinces will be rendering a great service to their less fortunate fellow-workers who dwell in the large cities by describing the many lovely spots which are within such easy reach of many of their homes.

—♦♦♦—

PHOTOGRAPHIC societies are now arranging their summer excursions, when excellent work is done. It appears to us that much benefit would be derived by the exchange of invitations between the neighbouring societies, and that the friendly intercourse of members of different societies is much to be desired as being likely to advance photography and engender a spirit of emulation between workers in photography.

Whilst upon this subject we should like again to call attention to the desirability of societies having permanent rooms, and to the immense benefit that would be derived, especially in seaside towns and holiday centres, of granting temporary membership to members of any photographic societies or to persons introduced by, say, ourselves. We are sure that if such a course were generally adopted it would be much appreciated by the many hundreds of ladies and gentlemen who are on photography and pleasure bent.

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THE Birmingham Photographic Society hold annually a prize competition and exhibition entirely limited to the work of their own members. We note that this year there are no less than thirty classes; in every one prizes are offered, many by the society and the remainder by prominent members. The photographs receiving prizes remain the property of the society. The Birmingham workers in photography are very successful; the society is a large one, and thoroughly representative of photography.

Rumour has it that a photographic club is to be formed, but we do not think, taking into consideration what the existing society has done, that the scheme will be successful, especially as it is matter of common knowledge that amongst the promoters there are men who are not at all popular in photographic circles in Birmingham.

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OUR readers may not generally know that six prizes for photographs are offered by the Art Committee of the National Eisteddfod of Wales, which will be held at Swansea in August this year. The classes are: (1) "Figure Subject." (2) "Landscape"—in both classes a gold medal or seven guineas. (3) "Views of Ancient Buildings, S. Wales," (4) "Views of Gower," (5) "Ships in Motion," (6) "Waves"—in all these classes a prize of a silver medal or three guineas will be given. The Editor of the *British Journal of Photography* will act as judge in all classes. Further particulars may be obtained of Mr. J. W. Jones, Hon. Secretary, Arts Committee, 20, High Street, Swansea.



ON Tuesday evening M. Leon Vidal read a paper before the Photographic Society of Great Britain on "Photographic Methods of Obtaining Polychromatic Impressions." For the purposes of the meeting a considerable number of coloured prints were fixed upon the walls of the room, in all of which photography played a more or less important part, and many of them were artistic and very attractive. Specimens were contributed by the Photochrome Co., Zurich; Frisch, Berlin; Goupil, pictures from the *Figaro Illustré*; Löwy, Vienna; Haufstaengl, Munich; Rommel and Co., Stuttgart; Rouillé, Paris; Wezel and Naumann, Leipzig; and a landscape by Mr. Bligh Bond, which, however, is not a good specimen, the several printings not being in accurate register. Messrs. Rommel's sheet of Dresden figures showed charmingly soft colours. The public will be admitted to view the exhibits on presentation of visiting card.



### HOME PORTRAITURE.

WE have considered briefly the single figure, and noted a possible chance of a group indoors. We have now to consider some general principles to be observed in out-door portraiture.

There is one background which is very common and is by no means artistic, that is a trellis work, sometimes partially covered with ivy, jessamine, or Virginia creeper, which is too often sufficiently thrown out of focus to make the interstices of the trellis round, patchy spots, which attract the eye before the figure or face. Ivy, Virginia creeper, or any other plant or a shrub may form a very pretty artistic background, but it should never be as sharply focussed as the sitter, nor sufficiently fuzzy to lose its outline and character. Never take your sitter standing against a wall, the top of which just comes across the back of his neck; this gives one an idea of the guillotine or block, which is not pleasant. Always look carefully, too, to see that there is no obtrusive branch or flower which apparently grows out of his neck or the top of his head. We have a most curious example of amateur portraiture in which the sitter, a lady, wears a hat trimmed with some flowers, and from the position she is placed in it looks for all the world as though she was supporting a whole rose tree on her head.

A sitter should never be placed in the sun, nor under a tree through the branches or leaves of which the sun shines on him in patches, or the resulting prints will give one the idea of a piebald sitter. Very good results can frequently be obtained by placing the sitter in the angle of a wall facing the north or north-west; but it is far preferable to use a lawn studio, such as sold by Prouting, of Tilehurst. We have used one made on the same principle for some time with the best results. With such a studio one can command the lighting, and obtain results otherwise impossible, and the cost is but small.

Out-door work gives us very good chances for happy groupings, and we shall note one or two possibilities, leaving our readers to carry out more fully the ideas we sketch. Tennis parties are capital opportunities, not only for flirting, but also for group work. Thus we may have two gentlemen, one in the act of tossing, the other watching him; and two young ladies standing together having a confidential chat, and "Tossing for Partners" will tell the story. In the background we can place a group of on-lookers, and perhaps a couple quietly walking down a path or across the grass for a quiet tête-à-tête. Afternoon tea out of doors, again, affords us another capital subject—the tea-table, the presiding divinity and her attendant satellite, then two or three pairs scattered about, but near. Here one must apply to a great extent the well-known rules of composition, which are easily mastered. Whatever you do, carry out the idea

well. Do not crowd everybody together; give some tea-cups, others plates, etc., and fill cups and plates; and don't let all your sitters look straight at the camera; let them chat to one another. Again, in out-door work there are plenty of chances of making a pretty picture with children, either singly or in groups at play, or at the swing, etc., and far greater success can be usually obtained, as the light is more even and stronger, and therefore a somewhat slow shutter may be used.

The fortunate possessor of a flight of stone steps leading from the house to a drive has a capital chance of artistic composition, especially if riding hacks can also be had to order. Thus we may plant a gentleman half way up the steps, looking into the hall of the house through the open door or impatiently at his watch, and make a groom lead a pair of hacks up and down, and a title such as "Impatient" or "How much Longer am I to Wait?" tells the tale. A very pretty little study can be made from a cavalier arranging the riding habit of some fair dame, whilst a groom holds the horse. Then, again, we have the forlorn maiden watching her lover riding away, or anxiously looking for him. There are hundreds of such subjects to be found, with a little care in posing so as to conceal the art, and probably one or two failures may be met with ere success, and a picture crown the efforts.

To the fortunate visitor to farmland there are subjects innumerable ready to hand; they only want seeing, that is all; such subjects as feeding calves, poultry, etc. Then again, many a homely yokel with his work-a-day smock will make an excellent subject, but too often the operators seem blinded by familiarity or false pride, never thinking that in such homely and true to nature pictures there is the one touch of nature that makes the whole world kin, and that such scenes which may fairly take their place in a competition such as our "Photography at Home" are far superior to the stiff and inartistic work too often a libel on the poor sitter.



**Messrs. Underwood and Co.,** of Birmingham, have just appointed an agent in London (Mr. D. R. Duncan, 186, Fleet Street, E.C.), where all their special cameras and photographic apparatus may be inspected. In an early number we shall refer to their goods again.

**Messrs. Spiers and Pond, Ltd.**—Few of our readers will be aware of the enormous extent of business done by this firm, and many will, we are sure, know for the first time through our advertising columns that the firm have an extensive photographic department at their central stores, which is well worth a visit. The standing of the firm is quite sufficiently well known to assure amateur photographers that whatever work is undertaken will be well done, and everything they supply of the very best.

**Gotz's Cameras.**—We drew attention a short time since to the excellent cameras turned out by Mr. Gotz, of 19, Buckingham Street, Strand, W.C. We understand that he has quite recently sold the Duke of Marlborough a whole-plate kit, also one of his "Fairy" cameras, with all the mounts made in aluminium, and that he has prepared a specification for a 15 by 12 kit. It may not be generally known that Suter, of Basle, was the first lens maker who adopted the standard (U.S.) numbers of the Photographic Society of Great Britain, a lens of five and a half inch focus will start from  $f/6.6$ . A very large business is being done in these lenses. Suter was also the first maker to use Jena glass. Mr. Gotz is his agent in this country.

**The "Talmer" Automatic Camera.**—It will be noticed that Messrs. Talbot and Eamer are offering a special discount of 5 per cent. for cash to all purchasers of their improved automatic "Talmer" Cameras, provided they receive the order on or before 18th inst. Further, they undertake to send the cameras carriage paid. The firm have a large stock of cameras ready packed, they expect a very large sale, and have made special arrangements for despatch immediately on receipt of order. It is not Messrs. Talbot and Eamer's custom to give discounts, but they are making an exception, because they have a good stock of cameras on hand. We may add here that the "Talmer" is a cheap camera, and thoroughly reliable. No one regrets giving £3 10s. with landscape lens, or £4 12s. 6d. with R.R. lens for such an admirable instrument.



## Letters to the Editor.

### RE SOCIETY AT STREATHAM.

SIR,—I see in your issue for last week a note about the formation of an amateur society for Streatham. I cannot but think that too many societies within a small area is a mistake.

The North Surrey Society, which was the pioneer society for this part of London, and is, I believe, the oldest existing society South of the Thames, is within twenty minutes' walk of Streatham, and there is a good train service between Streatham and Tulse Hill station, which is two minutes' walk from the society's rooms.

Since the North Surrey was started, new societies have sprung up in Dulwich, Brixton, and Clapham, but I am sure that better work would be done if these societies were to unite in some central position and form a South London Camera Club, with a club house of their own.—Yours faithfully,

HAROLD SENIER

(Hon. Secretary, North Surrey Photo. Soc.)

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### THE EXPLOSION OF A GAS REGULATOR.

SIR,—I have read the letters in your paper *re* the above. Mr. Soames is entirely wrong, and in every respect the hydrogen was not turned on, and the question of mixed gases is out of the question. The first firing took place, as you can see, on the neck of the regulator where the collar joins. An explosion of mixed gases could not very well have acted on that, and besides, there would only have been the explosion and no fusion further. I had not even tried to light the hydrogen, as I have already said, and was adjusting the oxygen piping. There could have been no cumulative pressure, as each time I found it leaked—*i.e.*, the collar—I took it apart, thus allowing all gas to escape. I am inclined to accept your theory, with Mr. Horton's. Some minute particles of iron filings got in the cylinder, and their being forced through the narrow neck generated heat (we know the affinity of iron filings to oxygen); this heat or fire being started, found some hydro-carbon, and the direct cause of the explosion was the heated air. At the best we can only theorise; but the explosion followed the turning of the tap, as quickly as the falling of the hammer of a gun produces the report. I should add that there were two friends helping me who have had a considerable experience with lanterns; both of these are perfectly satisfied, first, that there was no light near, and further that the mixed gas theory will not hold. I would like Mr. Soames to examine the regulator, and he will admit he is wrong. My delay in replying to his letter is explained by my being in the United States—Yours truly,

HENRY D. BRANDRETH.

New York, April 28th, 1891.

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### WHAT IS AN AMATEUR?

SIR,—You have just now got a very bad attack of this ancient complaint, which breaks out so frequently in a fresh place with undiminished energy. I trust it may soon run its course, and leave no evil effects behind it. My own views are expressed so nicely in the letter of Mr. G. H. P. Burne that it would be really sinful to take up your space by restating them, though I am not in the happy position of being mentioned by "An Inquirer," as I have never attempted to exhibit at a public exhibition. Had I done so, prices—and "reasonable" ones too—would have been affixed to my prints. Let me apply the principle of Mr. Francis Clarke to a practical case. You can now buy the materials for making a camera for one shilling. Let us say that a youth of the tender age of nine or ten—whom we will call Brown—does so. Brown, having made the camera, takes a shot at Jones's sister, a lady blessed with a fair share of nature's charms, and the result, though not up to exhibition standard, is at any rate recognisable. Jones thereupon wishes to possess a copy of his esteemed relative, but Brown declines to be bothered to print him one. Jones finally overcomes Brown's scruples by the use of a new sixpence which his aunt has bestowed on him as a birthday gift. Brown instantly blossoms into a full-fledged professional! Bravo! An *enfant terrible* indeed!

For myself, I don't trouble my head about this point. I have sold many of my photographs at reasonable prices (any price would be reasonable for these gems). I intend to sell many more if requested to do so. I shall, nevertheless, call myself an amateur all my days, unless I enter the trade. Other people can call me exactly what they please. But if Mr. Francis Clarke's

reasoning is to hold good, then besides being a professional photographer, I am (1) a professional chemist, (2) a professional electrician, (3) a professional author, (4) a professional watch maker, (5) a professional mounter of microscopic objects, (6) a professional naturalist, (7) a professional printer! I believe I am also a professional tinker, but I am not quite sure about that. Yet such is the frightful denseness of my family and all my friends, that if asked what was my profession they would reply without a moment's hesitation that I hadn't any. As a matter of fact, I am continually being asked what profession I intend to take up. Will people never be satisfied?—Yours faithfully,

REGINALD A. R. BENNETT, B.A.

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### STEREOSCOPE.

SIR,—I should be much obliged if any of your readers could tell me of any London firms who supply open achromatic stereoscopes, capable of being used with prints which are each 3 by 4, and which are fitted with eyeshades.—Yours, etc., STEREO.



## Studies in Art for Photographers.

BY REV. F. C. LAMBERT, M.A.

### CHAPTER VII.

#### CONTRAST.

WE have yet to consider one of the strongest elements of all art work, viz., *contrast*. A moment's glance at the structure of any great work of fiction, the drama, music, in short any of the means which appeal to our senses, will show that contrast lies at the very root of our receiving sensory impressions. Rest is only thoroughly enjoyed after labour. After the monotony of silence how pleasant is a tuneful sound or familiar voice! Darkness is even grateful and restful after the strong glare of a noonday sun. In short, it is by comparison and contrast that we enjoy not only our aesthetic sensations, but also to a great extent are enabled to form our ideas. The words light and dark are notions of comparison. For instance, the dark shadow of a midsummer sun is bright compared with the glint and gleam of a full moon.

To limit ourselves for the present to contrast as applied to pictures. And first, let us be careful to note that, as in all great principles, the idea may be presented in many forms. For instance, we may apply it to the estimation of lines. It is by contrast of the straight and the curved that we are enabled to perceive the niceties of fine distinctions. As the zig-zag is a contrast to the straight line, so again the straight line is a contrast to the curve; and even again among curves there is much force of contrast, as, for instance, between the circle and ellipse or the spiral and parabola. What we have already described as balance in the direction of lines is, in truth, a matter of contrast of direction.

Again, the force of contrast is felt among forms, the round (spherical) and the square; the regular, say of a crystal, and the amorphous, as of clay. Who has not noticed the wearisome monotony of the boulders or pebbles on the beach, and how one angular bit of rock seems a welcome relief?

It will appear at once to the observant that as monotony produces a feeling of weariness and weakness, so in the same way judicious contrast keeps up interest and conveys the feeling of strength.

There is yet another way, perhaps the most powerful of all (pictorially), in which contrast strikes an effect at once, viz., in the matter of light and shade. It is curious to notice that many writers on art seem, as it were, to limit the notion of contrast to chiaroscuro, and ignore this element or factor in any other direction. The comparative study of art shows this to be a mistake,



Now in the matter of contrast of light and dark it is customary to tacitly assume that Rembrandt was the discoverer of this idea. There can be no doubt that he did use it with truly wonderful success, but at the same time with a keen knowledge; and it is the want of this latter qualification which leads so many of his feeble imitators into quagmires and pitfalls. It may be questioned whether in some cases Rembrandt has not strained truth for effect, but even granting that he has used an artist's license, it cannot be denied that it has been done with a master's hand. It is a matter of regret that his honoured name has been tacked on to a certain mannerism in professional portraiture, lending as it were a fictitious sanction to results which are sometimes terrible enough to stir his sepulchred bones. *Requiescat in pace!* This much, however, the observant photographer cannot fail to learn from an intelligent study of Rembrandt's paintings and etchings, viz., that vigorous contrast in lighting gives the spectator an impression of strength and directness of work. Be it observed how the dark gets darker and darker as it gets nearer and nearer to the point of extreme contrast, and in the same way so does the light grow lighter and lighter.

This is due partly to an optical effect and partly to the actual gradation of light values. The following very simple experiment is worth the making, and will illustrate the point under consideration. Take a piece of paper, white, but not of the very whitest; also a piece of dull black or nearly black paper. Now, in a fairly good and diffused light, bring them together so that the white overlaps part of the black paper. It will be observed that the white seems to get whiter and the black to get blacker as they approach the junction. Take now a piece of grey paper and hold this against the black, and observe the relative tone values. Now slide your piece of white paper between them, so that the grey is separated from the black by a strip of white, and observe that this white strip makes each of the other two appear darker. Quickly draw away the white separating strip, and note that the grey seems to grow lighter than before. In such simple ways may we with profit study the effect of contrast.

No one knew better than Turner the great value of contrast. How often may we observe a dark tree against the strongest light of the sky. In fact, this device has led some giddy scoffers to call it "Turner's great tree trick."

Several of the later French painters have used a dark figure against the sky with the best effect.

There is yet another way in which contrast may be introduced with telling force, viz., in the sentiment or theme of the picture. An illustration will make this clear. Suppose, for instance, the subject be chiefly pathetic—say a mother nursing a sick or dying child—the pathos will be strengthened by the *tasteful* introduction of some opposing sentiment; say a kitten playing with the neglected doll of the sick child. The proper use of this element requires the highest skill, lest it run into *bathos* and destroy all *pathos*: for truly a gossamer line separates the sublime from the ridiculous. The employment of contrast in sentiment is, again, a most powerful device in the drama and also in fiction—and in this latter realm few can compare with Dickens in his skilful introduction of suggested humour amid the most pathetic surroundings.

It may not be out of place, however, to give a note of warning to the photographer, lest he run away with the idea that any contrast means strength and vigour, and be tempted to under-expose his negatives and produce "soot and whitewash" prints. One must be most careful to distinguish between hardness and contrast; the former is a vice, the latter a virtue. The former often means spotti-

ness, the latter breadth—the former weakness, the latter strength.

As a general rule, one may say that we can only have one area of vivid contrast, *i.e.*, where, by skilful selection, we bring the deepest dark close to the brightest light. Other minor contrasts may and no doubt will exist, but the law of principality will teach us to so contrive matters that there shall be one, and only one, great contrast, and that it shall be where the chief interest is, so that the eye not only may be drawn to that point, but may be disposed to dwell there—at any rate, for a while.

Who does not know the power of a velvet cap for an old man to partly cover his scanty grey locks, and keep the eye resting on the face, instead of wandering over his enfeebled form?

Closely connected with this subject, we may direct attention to the arrangement of the subordinate masses of light and dark. It will be observed that if this be done so as to avoid any strong secondary contrasts, and so that the vigour be thrown into the one chief leading contrast, then it would seem as though this plan lengthened the *scale* of light and shade, *i.e.*, produced the effect of a greater range or number of gradations between the highest light and the deepest dark. And the reason for this apparent result is probably due to the effect of the strongest light and dark in sharp opposition, each intensifying the other.

As a matter of actual practice and work in the field it will *generally* be found that the best effects of breadth and contrast are obtained when the chief source of lighting is *rather* towards the front, so that the shadows are cast somewhat towards the spectator; but if this be carried to the excess of having a "front light," the effect is apt to be harsh and crude; while, on the other hand, if the light be behind the spectator there is seldom any vigorous contrast, and very frequently a general flatness and feebleness throughout.

(To be continued.)

## Photo-Micrography.—IX.

BY ANDREW PRINGLE.

### TREATMENT OF CERTAIN SPECIFIC KINDS OF OBJECTS.

It may to a considerable extent facilitate the early experiments of our readers if I give more or less definite suggestions as to how certain classes of objects not infrequently met with may be treated. It is, of course, impossible to give definite instructions for the treatment of any particular object, for one of the pleasures of our science is, that no two objects are exactly alike in every respect, and skill is shown in suiting our treatment to our objects. No doubt there are numbers of objects which in a general way may be placed in the same class so far as the best treatment is concerned, but it will soon be found that in order to attain the best results from a number of subjects, some variation will be required in our method of work.

I am not able to say which of all the kinds of preparations sold in our opticians' shops are the favourites with the beginner of photo-micrography; but certainly such objects as insects and diatoms are strongly in favour. Now, in my opinion, insects are in ninety-nine out of a hundred cases very bad subjects for a beginner; they are certainly large in most cases, but they are almost always of a very bad colour for photography, and the various parts of the insects

NOTE.—Mr. Pringle has kindly consented to answer any questions on photo-micrography. Letters should be addressed care of Editor.



generally lie in different planes which entails great and insuperable difficulty at the outset. Diatoms are very much more appropriate for early attempts, for they are practically without colour, and if suitable samples are chosen—fairly large and flat—and if we take the precaution to ascertain beforehand the exact appearance we ought to obtain, we shall know pretty well how near to a proper result we have arrived when our first negative or print is produced. I would suggest a good flat frustule of *Arachnoidiscus Japonicus*, for instance. It would be still better to choose some such object as a good thin section of deal or an *Echinus* spine, but I have reason to know that the beginner as a rule is averse to try really easy objects, his ambition is lofty and his knowledge of difficulty is small. I do not know any object more suitable than a section of deal, provided it is thin and laid flat. In such a case we have only to deal with so much opacity, and we have no puzzling colour to take into account. The power used should not be higher than one inch, and a low angle condenser should be used, as suggested in an earlier chapter. For objects presenting only light-obstruction without colour, ordinary plates should be used, and success depends almost entirely on proper exposure and development.

When we are working on diatoms, several matters have to be taken into account. In the first place, if we are to obtain results of any value we should endeavour to use as much angle as possible, in order that we may get a good amount of "resolution." If we are dealing with specimens of any great thickness or "depth," we shall soon get into the land of disappointment, no matter what method we follow in the hope of getting our images sharp all over; and of course the difficulty increases as the square of the magnification we are attempting. With the exception of this difficulty of depth, diatoms ought to be plain sailing, for we do not need to consider colour, and it is easy to tell a sharp negative when we have got one. This refers to the coarser kinds of diatoms; when we come to try "test" diatoms, such as *P. angulatum*, *S. gemma*, *N. rhomboides*, *A. pellucida*, and such like, we are in the regions of very difficult work indeed, and I do not recommend any one to try such work till he has attained a considerable amount of skill both in microscopy and in photo-micrography. In all our work, but especially in diatom work, the difficulty will at once be found when we come to deal with high angle or numerical aperture. It is not permissible to curtail the angle in order to get a "stronger" image; the widest available aperture must be used for "critical" work of this kind, and the exposure and development should be such as to give the pluckiest image possible without any blocking of the details. For such work I strongly recommend the quinol developer well restrained, the development not to be rapid, but to be carried to as great an extent as feasible without blocking the shadows. Intensification may be thought by some an advisable step, but it is not so; in my experience a diatom-negative intensified is almost always a negative spoiled. Plain plates are best for this work, and they should be of the plucky, density-giving quality, with plenty of emulsion on them.

When we are dealing with insect preparations as usually sold, we often find great trouble with the colours, which, in some cases, are really not fit for photography at all. But generally much may be done by the use of colour-correct plates, particularly if, as usual, the objects are of yellow colour. The required exposure in such cases is often very long. I have exposed on a flea a hundred-fold my average time for the magnification I was using. When, as is not at all uncommon, we have an insect with a deep yellow body and very pale transparent limbs, the difficulty is vastly increased. All I can say in advice is, expose for the dark

parts and keep the limbs, if you can, by careful development. In general, for insects use a colour-correct plate and no screen.

With very pellucid objects the invariable temptation is to cut down the aperture, and so to get a strong image on the ground glass; but we must not yield to the temptation more than is absolutely necessary. The skill in such cases is to get a good plucky negative with plenty of resolution. There are many pellucid objects which do not require any great angle to show all their structure, but even with such objects we must not shut off too much angle, because we shall then get a false or "structure" image. I had an example of this not long ago in treating a kind of parasite infesting human blood. This object is almost as clear as water; yet I had to use a considerable angle, otherwise I lost much of the worm's appearance. The only proper way to treat such objects is to keep down the exposure as much as possible and to use slow heavily-coated plates, using no more than the necessary angle.

The ordinary preparations emanating from medical laboratories are easy or difficult to photograph according as they are well or badly stained. Nothing photographs better than a logwood section if the staining is discrete and plucky. If the stain is faded or underdone, we may use a plate corrected for yellow, and a screen of yellow tint. Picrocarmin yields a stain well suited for our purpose when the stain is properly used, and when there is plenty of the picric acid left in the section; a colour-correct plate without a screen usually answers for such work, and the stain is to be recommended for our purpose.

When we come to consider the multiple stains that are now so common and so useful, we find ourselves in regions of greater difficulty. For instance, my own favourite stain for physiological and pathological subjects consists of bright blue, red and yellow, and I need not say that this is a very awkward combination to photograph, but I think that when it is photographed well no other combination can rival it for utility, for practically every kind of tissue is well shown. For such sections I always use colour-correct plates, and I use screens or none according to the proportion of the colouring in my preparations. If, for instance, there is a large proportion of deep blue unclear elements, no screen may be required; if red connective tissue is in excess, I may need a yellow screen to cut off some of the blue till the reds have time to impress themselves on the plate.

Bacteriological preparations are very frequently double-stained also, and here we have the added difficulty of having to use high magnification. Still, the general principles of treatment remain the same. If the stain is red alone there is no need to use any but an ordinary plate; but if we have a double stain or a faded stain we are almost forced to have recourse to colour-correct plates with or without screens. A faded preparation of gentian violet is common and puzzling, but it may be met with an orthochromatic plate and one or more screens. When a preparation is stained red and blue—a very common combination—a yellow screen will greatly facilitate matters even if an ordinary plate is used, though a colour-correct one is better.

Some objects are mounted in yellow media; use colour-correct plates for such, in order to get good dense ground.

It would be an endless business to attempt to cover *all* the ground under the heading of this chapter. I have tried to cover the commonest and the most important ground.



**West London.**—The annual smoking concert was held at the Richmond Hotel, Shepherd's Bush, on the 9th inst. The attendance was somewhat small, probably in consequence of the prevailing epidemic, but the entertainment was a good one, and was highly appreciated by those present.



## Our Contemporaries.

THE *Beacon* quotes from the Russian *Amateur Photographer* the following method of making "Photo-Mechanical Prints with an Ordinary Copying Press":—Herr A. V. Lavroff, the editor, thus describes his method for obtaining a cliché from which it is possible to obtain several hundred impressions in an ordinary copying press: "On a thick sheet of glass I obtain a cliché by means of bichromated gelatine, which, after developing, I leave to dry at the ordinary temperature for twenty-four hours, after which I flood it with the following 'bain mouilleur':"

Water .. .. .	100 cc.
Glycerine .. .. .	200 cc.
Hyposulphite .. .. .	2 grammes.

This is allowed to act from one to two hours, according to the desired relief. Then I remove the liquid from the glass by means of a very soft pad and blotting paper, and then I ink the cliché by means of a gelatine roller. The first pull or two are generally poor and are somewhat spoilt by the dampness of the cliché, but the subsequent impressions are excellent. In order to print in the copying press, I lay the ink clichés on a piece of india-rubber cloth, a mask of paraffin paper, and then the paper on which I wished to have the impression, and over this a thin bag of fine cloth filled with wadding. It is the use of this blanket which makes it possible to press the paper into contact, and to obtain all the fineness and details of the cliché. Of all the formulæ I have tried for the 'bain mouilleur,' I have found the above the best, as well for the relief as for the number of impressions. If after about twenty pulls the details of the high lights begin to show grey, one only need damp the cliché with a pad dipped in the same liquid, in order to make it as good as ever."

*Wilson's Photographic Magazine* gives the following hints for the use of palladium, instead of gold, in toning:—"The prints should be on ordinary salted paper and be printed deeply; very dense negatives with contrasts clearly defined, without hardness, however, are the most suitable. The image is first washed in pure water, then allowed to disgorge in a slightly alkaline bath (one to two per cent.), and finally kept in water for a few minutes. The print is then placed on a glass plate, the printed surface on top, sponged with a little bibulous paper, and the toning proceeded with; for this purpose a kind of brush is made by tying to the end of a glass rod a tuft of cotton; this brush, imbibed with the solution of chloride of palladium, is passed over the image repeatedly, until the red tones that it had acquired in the bath have turned to a sepia-brown, therefore it is necessary to go over the dark shadows oftener. The operation should be conducted slowly, so as to give the palladium time to displace the silver. The toned print, after washing in several waters, is then fixed in a hyposulphite bath at ten or twelve per cent., rendered thoroughly alkaline by a few drops of ammonia; the object of the ammonia is, by saturating the free sulphurous acid, to prevent the formation of sub-sulphurets of silver, which would cause the whites to become yellow. After fixing, wash in abundant water and dry between sheets of bibulous paper. The solution of chloride of palladium is made at one per cent. of water, and should be acid; and, if necessary, made so with a very small quantity of chlorhydric acid."

The *American Journal of Photography* gives the following curious dodge, which some of our readers may be inclined to try for themselves:—"An entirely new method of producing coloured silver prints, giving extraordinary results and effects, is published by Ogonowski in his book upon photochromy. The proceeding is as follows: Ordinary plain salted photographic paper is floated on the silver bath as usual, and printed faintly under the negative; it is then washed, toned, and fixed. This faint positive print while still wet is laid upon a sheet of absorbent paper; then both are placed upon a sheet of glass. The damp print, from which all superfluous water has been absorbed, is now worked in with water-colours, using only local tones, avoiding the use of flake white, vermilion, chrome and cadmium yellow. The print is now thoroughly dried; it is then albumenised one to three coats with salted, whipped albumen. It is then again silvered, and again placed under the negative, taking great care that the register be true. The print is now made similar to an ordinary albumen print, washed, toned, and fixed. The tints, being protected by the coating of the albumen film, are not

affected by the various processes. These tinted silver prints are said to produce the most charming effects."

*Anthony's Photographic Bulletin* says:—"The following method has been suggested for removing the yellow stain from negatives caused by prolonged development:—

Hyposulphite of soda .. .. .	1,000 grammes.
Water .. .. .	4,000 c.c.

To which is added—

Sulphocyanide of ammonium .. .. .	120 grammes.
Powdered alum .. .. .	30 "

This is allowed to stand for several days, being often stirred, after which add 150 c.c. of a chloride of gold solution, 1-200. This solution is then decanted to get rid of sediment and the stained negative soaked in it for a half hour, when the colour will be found of a beautiful violet-black or gray-blue tone, finely adapted to printing."

The *English Mechanic* says: "The bright nebula near the star Merope which Mr. Barnard thought had never been photographed probably because a sufficient exposure would so over-expose the star that the two images would coalesce, has, it appears, been photographed at Oxford, as Prof. Pritchard states in *Astronomische Nachrichten* that the nebula was plainly impressed upon a photographic plate taken at Oxford on Jan. 29, 1889, after an exposure of two hours. It also appears on several other plates, which were exposed from 20 to 120 minutes, and as the disc of Merope in those varies from 20" to 30" in diameter, while the nebula is about 40" distant, the separation is generally plainly marked."

*Wilson's Photographic Magazine* says: "The care of the lens should always command the greatest attention on the part of the operator. It is the most valuable, and often the most neglected, of all the photographer's working tools. Frequently it is left at the mercy of dust until its usefulness is seriously impaired. A sudden change of temperature is also very injurious to a lens, causing damp or moisture to form on the highly polished glass. If this occurs very often with the same objective and is not immediately removed, it will be found that a permanent mist or fog has spread over the surface, defying all attempts at removal. The lenses should occasionally be taken apart and cleaned with chamois, taking great care that the soft flint-glass is not injured. Positively nothing but chamois should be used in cleaning lenses, and under no circumstance should the surface be breathed upon. In conclusion, I would remind photographers that a poor lens is about the most undesirable article they could possess, and money invested in it is little better than thrown away."



## Thursday Evenings at the Camera Club.

(BY ONE OF OUR STAFF.)

MR. MACHELL SMITH presided at the meeting of the Club on the 7th inst., when a goodly number of members turned up to hear Mr. Willis discourse on "Clam-Chowder," and there was much hazarding of ideas as to what the paper was to be about. A few of the members had heard of the dish before, but the greater number were apparently innocent of any acquaintance with it. However, Mr. Willis soon explained his choice of title, by telling how he tasted clam-chowder in America. It is a great favourite on Coney Island, and the principal ingredient is clam, but there were many others which he had forgotten; the idea, however, was a sort of mincemeat or hotch-potch, which he warned them would be the character of his paper. He began the paper by repeating some remarks he had recently made before the P.S.G.B., in the course of which he pointed out that during the development of the print a portion of the ferrous image was dissolved out and diffused in the bath. If the reducing action was slow in proportion to the rate at which it was dissolved, the larger portion of the image would diffuse itself in the bath; if the reducing action were rapid, less salt would be diffused in the bath and more be available in the paper. The temperature and the strength of the developer both affected the rapidity of the process. At this point Mr. Willis showed a considerable number of prints developed with various developers, of various strengths and various temperatures, and pointed out that the lower the



temperature the shorter the scale of tones. If it were a fact that the gradation of a negative were absolutely fixed before development by the exposure given, it was equally certain that a good platinotype worker could vary the gradation of tone by modifications such as he had mentioned. He explained that the prints were on paper only two or three days old; he should have preferred it two or three weeks old, as it would have been better for the purpose of testing. The prints were treated in baths varying in temperature from 60 to 140 deg. F. The principal features in the cold bath were that the shadows were less intense, the middle tones were much reduced in strength, and the curve was flattened. The prints also required much deeper printing than for the hot bath. There was one point to be remembered, however, that no two rolls of paper agreed exactly, and in using the cold bath the paper must be handled very carefully, as finger marks were quickly made. If the development did not go very well, they should put the prints aside in a drawer for four or five hours before developing them. In the colder baths a slight difference of temperature had a greater effect than in the hotter ones. For instance, the difference between 60 deg. and 75 deg. was greater than between 100 deg. and 150 deg. Development also was slower in the cold bath. On the whole, he preferred the D solutions, oxalate and phosphate, as it was almost impossible to make a paper which would develop on the normal oxalate without giving grain. Mr. Willis then showed some exquisite prints on wood, which had been developed cold, and treated in various ways afterwards. Some were French polished, and some—the way he preferred—treated with starch sizing followed by boiled linseed oil.

Mr. Maskell wanted to know how long an oxalate bath would keep, and if it could be restored to its normal condition. Mr. Willis said it might be kept for ever; and although it was not wise to restore an old bath, it could be done by boiling it with a little carbonate of potash and then acidifying. His own practice was to pour the old bath into a bottle and replenish with fresh solution before using again. Mr. Dawson said he was now using the bath with which he commenced; he added ten ounces of fresh solution to it before using; it was a hot bath. Mr. Debenham was curious as to the keeping qualities of the paper, and Mr. Willis said he had seen paper eighteen months old which had been round the world, and then gave good prints; he had seen good prints on paper two years old; at six years old the whites were lost. The A (smooth) paper kept better than the B (thick). The Rev. F. C. Lambert was mostly interested in sepia paper, and was told that it would keep if anything longer than the ordinary. It was, however, a very uncertain paper, and he had never seen two batches alike. Mr. Davison was glad to learn that it was uncertain; they did not want it all cut and dried. Mr. Willis still recommended the addition of oxalic acid to the bath for the sepia paper. He preferred the oxalate bath to the D solution for sepia paper. Mr. Davison thought the special solution seemed to cool down the tone. By variations of the development they could get a brown black, a proper brown, or a purple brown on the sepia paper. In reply to the Rev. F. C. Lambert, Mr. Willis said he hoped, eventually, to make sepia paper in a continuous roll. Mr. Elder related some experiments he had made in varying the developer. Mr. Lyonel Clark said that by using a strong developer, a low temperature, and an alkaline bath he got a long range of tone which would do well for hard negatives. Mr. Willis advised them, if they wanted to make the best of a hard negative, not to use paper that was too fresh; and then great difference was effected by developing immediately after printing, and by leaving for some hours before developing. Dr. Patterson had seen some prints which had been made on paper which had been travelling in an open tube across the Atlantic since November. It was not quite so sensitive as the fresher paper. The Chairman said in his experiments he printed very deeply, and developed with one part of the normal developer to five of water, and got some very good results, but he found that the paper varied.



**Another Find of Platina.**—According to the *British Journal of Dental Science*, May 1st, p. 415, a unique discovery has been made in the form of arsenide of platina, a metal hitherto of very limited occurrence. The new metal has been named "Sperryolite," in honour of its discoverer, Mr. Sperry, and it is found by washing the sand, which yields 70 ounces of platina to the ton. If there is any considerable quantity of the metal, there would probably be a drop in the price of platinum.

## The Picture Galleries.

BY "LOITERER."

### ROYAL SOCIETY OF PAINTERS IN WATER COLOURS.

A PLEASANT exhibition of 238 pictures, all careful, many excellent, some charming, may now be viewed at the Royal Society of Painters in Water Colours. Mr. Paul J. Naftel sends three examples of his work. "Up the Stream to Idwal" (3) is, perhaps, the best of them. Miss Clara Montalba has fallen in love with Venice, as evidenced by the idealising of "An After-glow" (5). In "Squally Weather" (11) Miss Montalba displays her accustomed skill, while in "Monte Berico" (193) she journeys to Vicenza. It is interesting to imagine these talented artists dispersing over Europe, and yet further afield than Europe, like a band of swallows, and returning like "the flowers that bloom in the spring," with the results of their art. What dainty detail there is in Mr. Herbert Marshall's "Nymegen" (8)! Into "The Bridge at Dinan" (9) we think Mr. C. Gregory has crowded too many figures. All that classic architecture and surroundings can do for a picture is to be found in Mr. Lawrence Bulleid's various pictures, of which we like best "A Hymn to Eros" (10). Mr. Bulleid has been very successful in his treatment of marble. All that Mr. Albert Goodwin sends to this exhibition is worth noticing. Especially admirable is "Sion" (120). Mr. H. C. Waite, P.R.C.A., must be complimented on his felicity in treatment of "Crib Goch under Snow" (16). The delicate purple-pink of sunrise is beautifully reflected. Mr. Alfred D. Fripp has painted the "Knife-Grinder" (20) and "The Pet Gull" (28) with great skill, and both these pictures are very pleasant to look upon. Mr. R. W. Allan, who accompanied Mr. W. S. Caine on his recent tour through India and who is hard at work in India at the present time, is represented by seven pictures. One cannot help imagining that Barbara Burdas figures in "The Whelk Gatherers" (21). How the late Miss Linskill would have enjoyed this skilful sketch! There is a dreamy restfulness in Mr. R. T. Waite's "River Adur" (22), which seems to realise the Post Laureate's description of

"Such a tide as, moving, seems asleep,  
Too deep for storm and foam."

Two snow scenes by Mr. Wm. Collingwood must not be forgotten. The artist has been very happy in his presentment of "The Matterhorn" (40), whose awful splendour has lured so many an Alpine climber to destruction. Mr. T. M. Rooke's "Rue Moll et Rue Champeaux" (45) is distinguished for his adroit treatment of the prevailing tint. Some of Mr. Walter Crane's pictures, notably "Arbutus and Pine" (55), are rather unsatisfactory. Mr. E. F. Brewtnall has inspired his picture of "Christian and Evangelist" (60) with much dramatic interest. Mr. Charles Davidson's sketch of the "North Coast, Cornwall" (62) is good, and its companion, "January, 1891," shows Mr. Herbert Marshall's familiar touch. Mr. Bulleid is not so pleasing in "Custos Rotulorum" (76), which seems rather incongruous. In "Phocion or Myrtilus" (152) there is a bareness of surroundings which serves to accentuate the figure of the girl. Miss Edith Martineau's "Cottage near Haslemere" (75) shows a quiet care for exactness which deserves commendation. Everyone, we venture to prophesy, will agree as to the cleverness of Mr. E. A. Goodall's "St. Paul's, London" (101). An unusual view of Lucerne has been adopted by Mr. Albert Goodwin (111), which has at least the advantage of novelty. "Ben Nevis" (115) displays all the masterly ability which we expect and find in all Mr. Birket Foster's work. "The Vesper Bell" (157) is not particularly natural or effective. Mr. C. B. Phillip is successful in his picture of "The Bonawe Narrows of Loch Etive" (159). The quiet peace of Mr. T. J. Watson's "Beneath the Lime Tree's Shade" (160) is very pleasant. A historical picture—"The Lady of Lyons" (170)—shows that Mr. H. G. Glindoni can deal satisfactorily with such subjects. Mr. Arthur Melville gives us a clever impression of "The Procession of Corpus Christi at Toledo" (184). We must not omit to notice some characteristic sketches of birds (219, 226, 227) by Mr. H. Stacy Marks, R.A.

### MRS. ALLINGHAM'S DRAWINGS.

The pictures by the first (and only) lady member of the Royal Society of Painters in Water Colours—Mrs. Allingham—are worthy of the highest praise. She has depicted, in the eighty-



six examples now being shown at the Fine Arts Society's, the sunny side of

"The world which seems  
To lie before us like a land of dreams,  
So various, so beautiful, so new."

Following on Mr. Alfred Parson's "Gardens and Orchards" (and to which reference was made in these pages recently), the drawings by Mrs. Allingham have an individual delightfulness. Look at "May" (7), and you will feel the cooling hands of nature upon your brow. "A Surrey Cottage" (18) is charmingly true, while "A Sandy Lane" (19) proclaims the neighbourhood of Witley at a glance. A very pretty little picture is "A Visit to Grannie" (24). This has no reference to Miss Red Ridinghood's exploit. Mrs. Allingham has drawn "Gorse near Hambledon" (34) very finely indeed. In her sketch of Lord Tennyson's residence in the Isle of Wight (42) the artist has portrayed the venerable Poet Laureate standing in front of the house. It is interesting to recall the fact that the artist's husband, the late Mr. William Allingham, was a poet of high order, and the author of "Day and Night Songs." "A Cottage near Haslemere" (48) is most artistic, while the sunlight effect in "Under the Old Elms" (66) is admirable. For brightness combined with detail, the last picture is a capital specimen of Mrs. Allingham's drawings.

#### RAPHAEL'S CARTOONS.

Seven cartoons, which, it is claimed, were entirely designed and executed by Raphael for the Vatican tapestry, are being exhibited at 4, Cockspur Street, S.W. The titles of the cartoons are (1) "The Miraculous Draught of Fishes," (2) "Death of Ananias," (3) "Healing of the Lame Man," (4) "Feed my Sheep," (5) "St. Paul Preaching at Athens," (6) Paul and Barnabas at Lystra," and (7) "Punishment of Elymas." Without entering into the subject of the genuineness of these cartoons, which can only be decided by experts, we may say that in the sixth cartoon, particularly, there is a display of vigour and character in the whole treatment of the cartoon which would be wonderful if painted by any one other than Raphael. The cartoons are well worth a visit, for the dispute as to their painter will not affect the admiration of his art.

### Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

THERE was a good turn-out of members at the meeting on Wednesday night, 6th inst., of the Edinburgh Photographic Society. Mr. H. J. Blanc, the President, was in the chair, and introduced Mr. W. T. Bashford, Portobello, who made a communication upon "Allotropic Silver," on the lines of Carey Lea's latest pronouncement on the subject. Mr. Bashford submitted specimen plates which he had prepared, showing the effects which can be produced by silver in the allotropic form. Specimen papers were also handed round, illustrating the bright blue, gold, and other colours of this silver. The communication was entirely scientific in its nature, and did not deal with the application of the allotropic form of silver photography. A conversation which followed was taken part in by Messrs. Hume, M'Alpine, and Forgan. The latter stated that he had been privileged to see the plates which Mr. Bashford had shown, that he had subjected them to microscopic observation, and that he found, on scratching the film, that, though golden in appearance, the atoms of the silver remained unchanged, the solutions having only stained it, but that he was unable to speak of the substance chemically.

Mr. Bashford, in reply, said that all that was claimed by Carey Lea was that the gold-coloured silver showed certain reactions in certain chemicals which normal silver did not show. The moment the slightest shearing strain was brought to bear upon allotropic silver it changed to white. A microscope was not the apparatus, he submitted, to test the colours with; they wanted a spectroscope, which would indicate the nature of the colours. He had no argument, nor had he any desire to support any theory; he was only trying to show what Carey Lea believed he had discovered and what many scientists on the Continent believed that he had discovered, a new form of the application of silver.

On the motion of the Chairman, the Society recorded their sincere thanks to Mr. Bashford for bringing forward the subject.

Mr. W. Forgan, Bristo Place, then showed a Wray lens

mounted in aluminium, and gave an account of the improved methods of the manufacture of aluminium, which had resulted in its being cheapened, so as to become a commercial product.

Mr. W. Hume said he found that when the invoice for aluminium mounted goods came in, their price was not at the rate of 7s., but something like 50s. per lb. The price was therefore against the introduction of that form of mountant. In the case of opera glasses mounted in aluminium, he found that the lightness was due to the thinness of the metal, and that, in consequence, they were always getting dimpled and required to be repeatedly repaired.

The Chairman suggested that lenses might be mounted with a combination of brass and aluminium, the brass in the exposed portions, which would give both strength and lightness.

Mr. Powell showed several negatives which he had developed, some of which had been exposed and had lain in the slides for four years, and the others were of the same batch of plates, but had only recently been exposed. The developer he used was hydroquinone (Thomas's formulæ). The plates were manufactured in February, 1887. They showed no traces of fog, and he would like to know if any of the members had had a similar experience.

Mr. M'Kean said he had kept plates for seven years, and then exposed them, and they showed some of the beautiful colours that M. Lippmann had found.

Mr. W. Lamond Howie said he went into all sorts of places, some of them pretty damp. For under-exposed plates he used a pyro and ammonia developer, and when green fog appeared he found that cyanide of potassium and hypo took it all off.

The Chairman then called attention to the Saturday Rambles, the first of which is on the 16th inst., and said these events had been arranged by the Council so as to allow the members to get back to the city in time to keep other engagements or to develop their exposures.

A new photographic society has been formed in Edinburgh under the title of "The Edinburgh University Photographic Society." As yet it is not an extensive body, only containing about forty members, but that may be accounted for by the fact that membership is confined to the University Union. It is, however, already an influential body, the patrons, twelve in number, including Sir Wm. Turner and six other Professors in the University. Professor Crum Brown, the holder of the Chemistry Chair, is Honorary President. The President is Dr. Drinkwater, well known in Edinburgh as a careful and enthusiastic worker in photography. The objects of the Society are "to promote and encourage the practice and science of photography among its members (1) by means of excursions to places of interest, and (2) by furthering the practice of photography as an aid to medical and surgical study, and science in all its branches." It will be seen that the Society is intended to devote the larger amount of its attention to the scientific side of photography. While that is so it is an open secret that the Society has been founded because of the lack of activity which has for some years characterised the Edinburgh Photographic Society. The third meeting of the Society takes place this week, when Mr. Wm. Hume, Lothian Street, is to speak upon "Enlargements and Enlarging." It is evident that the Society means work, as they have already secured rooms in Bristo Place, in which they have the accommodation of a studio, a dark-room, a printing-room, and reading-rooms. In that respect they are the most efficiently equipped photographic society in this district.

At the last monthly meeting of the Brechin Photographic Society it was intimated that the Committee have arranged to allow visitors to have the use of the Society's reading-room and dark-room at the nominal charge of 1s. per month. The Secretary (Mr. J. D. Ross) read a short but instructive paper on "Stereoscopic Photography with a Quarter-Plate Camera." Although not advocating the use of such a camera for the best stereoscopic work, Mr. Ross pointed out that a stereoscopic camera is not essential to the production of stereoscopic slides, and in proof he exhibited a number of transparencies and other slides taken with a small camera, without extra top stand or any other extra apparatus. The paper was favourably criticised, and Mr. Ross was awarded the thanks of the meeting.

**Tunbridge Wells.**—At the ordinary meeting on the 7th inst., Mr. A. Marshall in the chair, Mr. C. Leeson Prince, F.R.A.S., F.R.Met.S., gave his experience of photography forty years ago, Mr. Oliver Rogers was elected a member,



# **“Amateur Photographer” Dark-Rooms, 1891.**

THE “DARK-ROOMS” kindly placed at our service for the use of amateur photographers are classed as follows:—

*a* Amateur                      *d* Dealer or professional.  
*h* Hotel                        *s* Photographic society.

## **Letters of Introduction, Three Penny Stamps.**

<i>a, d</i> Aberdeen <sup>1</sup>	<i>h</i> Dartmouth	<i>d</i> Lechlade	<i>d</i> Romford
<i>d</i> Aberystwith	<i>d</i> Deal*	<i>h</i> Ledbury	<i>d</i> Royston
<i>d</i> Addingham, Yorks*	<i>d</i> Derby	<i>a, d</i> Leeds	<i>d, h</i> Ryde, Isle of Wight
<i>d</i> Amsterdam	<i>a</i> Devizes*	<i>a, d</i> Leicester	
<i>d</i> Andover, Hants*	<i>h</i> Dingwall, N.B.	<i>d</i> Leek, Staffs	<i>a</i> St. Agnes
<i>d</i> Aylesbury, Bucks	<i>a</i> Doncaster	<i>a</i> Lenzie, N.B.	<i>d</i> St. Andrews, N.B.
	<i>a, d, h</i> Douglas, Isle of Man	<i>d</i> Leytonstone, Essex	<i>h</i> St. Asaph
<i>d</i> Banff, N.B.	<i>d</i> Dover	<i>d</i> Lincoln	<i>d</i> St. Bees
<i>d</i> Barmouth, N. Wales	<i>d</i> Dresden, Germany	<i>d, s</i> Liverpool	<i>a</i> St. Helens*
<i>a</i> Barnsley*	<i>d, h</i> Dublin	<i>h</i> Lizard, Mullion	<i>d</i> St. Heliers
<i>d</i> Barnstaple	<i>h</i> Dunblane, N.B.	<i>d</i> Llandudno*	<i>a</i> St. Ives, Hunts*
<i>d, s</i> Bath	<i>d, s</i> Dundee	<i>d</i> Llanidloes*	<i>d</i> St. Leonards*
<i>h</i> Beaconsfield	<i>a</i> Dungarvan, co. Waterford	<i>d</i> London, Aldersgate, E.C.	<i>h</i> St. Mellons
<i>a</i> Bedford	<i>a</i> Duns*	<i>a</i> Borough, S.E.*	<i>h</i> St. Neots
<i>d, s</i> Belfast	<i>d</i> Durham*	<i>d</i> Charterhouse Sq., E.C.	<i>d</i> Sandgate, near Folkestone
<i>d</i> Belper		<i>a</i> Chelsea, S.W.	<i>d</i> Sandown, Isle of Wight
<i>d</i> Bexhill-on-Sea*	<i>d</i> East Molesey, Surrey	<i>d</i> Fenchurch Street, E.C.*	<i>a, d</i> Scarborough
<i>d</i> Birchington-on-Sea*	<i>h</i> Ebbw Vale	<i>d</i> Fleet Street, E.C.*	<i>h</i> Seddlescomb, near Battle
<i>a, d, s</i> Birmingham	<i>d</i> Edinburgh	<i>d</i> Gracechurch Street, E.C.	<i>a</i> Shaftesbury
<i>d</i> Blackburn, Lancs*	<i>s</i> Egremont	<i>d</i> London Bridge, S.E.*	<i>d</i> Shanklin, Isle of Wight
<i>h</i> Blakney, nr. Severn Bridge	<i>h</i> Ennistymon, co. Clare	<i>d</i> New Cross, S.E.*	<i>d, s</i> Sheffield
<i>h</i> Bodiam	<i>a</i> Enfield Town*	<i>d</i> Peckham, S.E.	<i>h</i> Shepton Mallet
<i>d</i> Bodmin	<i>d</i> Eton	<i>d</i> Walworth Road, S.E.*	<i>d</i> Shrewsbury
<i>d</i> Bolton*	<i>a, d</i> Evesham	<i>a</i> Long Eaton	<i>h</i> Sleaford
<i>h</i> Bonar Bridge	<i>d</i> Exeter	<i>h</i> Long Melford	<i>d, h</i> Southampton
<i>h</i> Boro' Bridge, Yorks		<i>d</i> Loughborough*	<i>h</i> Southend-on-Sea
<i>d</i> Bournemouth	<i>s</i> Falkirk*	<i>a, d</i> Louth	<i>a</i> Southport
<i>d</i> Bournemouth, West	<i>d</i> Falmouth*	<i>a</i> Ludlow	<i>a, s</i> Southsea
<i>d</i> Bradford	<i>d</i> Faversham	<i>d, h</i> Lynmouth*	<i>a</i> Stamford
<i>d</i> Bramley, near Leeds	<i>d</i> Felixstowe*	<i>d</i> Lynn*	<i>a</i> Steyning
<i>d, h</i> Brechin, N.B.*	<i>d</i> Finchley	<i>a</i> Lythe, Whitby	<i>d</i> Stockton-on-Tees
<i>h</i> Bridge, near Canterbury	<i>h</i> Fochabers, N.B.		<i>a</i> Stoke-on-Trent
<i>d</i> Bridlington Quay	<i>d</i> Folkestone	<i>h</i> Macroom, N.B., co. Cork	<i>a</i> Stony Stratford*
<i>h</i> Brigg, Yorks	<i>a</i> Four Ashes, nr. Stourbridge*	<i>a</i> Madeley, Salop	<i>a, d</i> Stourbridge
<i>d</i> Brighton, Hove	<i>a</i> Frodsham	<i>d</i> Maidenhead	<i>d, h</i> Stratford-on-Avon
<i>d, h</i> Brighton		<i>a</i> Mainz, Germany*	<i>d</i> Stroud
<i>d</i> Bristol	<i>a</i> Galashiels, N.B.	<i>d</i> Manchester*	<i>h</i> Sudbury, Suffolk
<i>h</i> Broadway, Worcester	<i>a</i> Genoa	<i>h</i> Mallow, co. Cork	<i>d</i> Sunderland
<i>d</i> Bromley, Kent	<i>h</i> Giant's Causeway, Ireland	<i>a</i> Malta*	<i>h</i> Sutton Bridge
<i>h</i> Brough, Westmoreland	<i>d, s</i> Glasgow	<i>d</i> Malvern*	<i>h</i> Sutton
<i>s</i> Burnley*	<i>d</i> Glenalmond, N.B. (nr. Perth)	<i>d</i> Mansfield*	<i>d</i> Swindon
<i>d</i> Burslem	<i>h</i> Glenarm, Belfast	<i>d</i> Margate	
	<i>d</i> Gloucester	<i>h</i> Merthyr Tydfil	<i>d</i> Taunton
<i>a</i> Cadiz, Spain*	<i>d</i> Gorleston	<i>d</i> Merton	<i>a</i> Tavistock*
<i>h</i> Callander, N.B.	<i>a</i> Goring-on-Thames	<i>d</i> Middlesbrough	<i>a</i> Thornton Dale, nr. Pickering
<i>h</i> Camborne	<i>a</i> Gravesend	<i>h</i> Monmouth	<i>h</i> Thorpe
<i>d, h</i> Cambridge	<i>d</i> Great Yarmouth*	<i>d</i> Montrose, N.B.	<i>h</i> Tintern Abbey
<i>d</i> Carnarvon*		<i>a</i> Mountsorrel	<i>d</i> Todmorden
<i>h</i> Capel-Curig, N. Wales	<i>a</i> Halifax*	<i>a</i> Mumbles, near Swansea	<i>d</i> Torquay
<i>a</i> Chalfont St. Peter, Mid.	<i>d</i> Handsworth*		<i>h</i> Tring
<i>d</i> Cheltenham	<i>d</i> Hanley	<i>d</i> Newark, Notts	<i>d</i> Tunbridge Wells
<i>d</i> Chepstow	<i>d</i> Harrogate	<i>d</i> Newcastle-on-Tyne	<i>a</i> Tynemouth
<i>d</i> Chester	<i>d, h</i> Hastings	<i>d</i> Newport, Mon.	
<i>a</i> Chesterfield	<i>s</i> Havant	<i>a</i> Newport, Pembroke	<i>s</i> Uttoxeter
<i>a</i> Chipping Sodbury	<i>d</i> Hereford	<i>a</i> Niton, Isle of Wight	
<i>a</i> Cinderford	<i>d</i> Hexham	<i>d</i> Norwich	<i>a</i> Ventnor*
<i>d, h</i> Cirencester	<i>h</i> Holbeach	<i>d</i> Nottingham	<i>a</i> Vienna*
<i>d</i> Clacton-on-Sea	<i>a, d</i> Hull	<i>a</i> Northallerton*	
<i>s</i> Cleckheaton			<i>h</i> Wadebridge
<i>d</i> Clevedon*	<i>d, h</i> Ilfracombe	<i>s</i> Oldham	<i>d</i> Wakefield
<i>d</i> Clifton	<i>d, s</i> Ipswich	<i>a, d</i> Oxford	<i>h</i> Warwick
<i>a</i> Clitheroe			<i>d</i> Waterford
<i>h</i> Colchester	<i>d</i> Jarrow	<i>h</i> Paignton*	<i>d</i> Wath-on-Dearne
<i>h</i> Colnbrook	<i>d</i> Jersey	<i>h</i> Paisley, N.B.	<i>a</i> Wellington, Salop
<i>d</i> Colwyn Bay*		<i>d</i> Penrith	<i>d, s</i> West Hartlepool
<i>h</i> Congleton	<i>d, s</i> Keighley	<i>d</i> Penzance	<i>h</i> Weston-super-Mare
<i>a</i> Coniston	<i>s</i> Kendal	<i>d</i> Pershore	<i>d</i> Wetwang, York
<i>d, s</i> Crewe*	<i>a</i> Kingstown, Dublin	<i>a</i> Perth*	<i>d</i> Weymouth
<i>d</i> Crewkerne*	<i>a</i> Knutsford	<i>a</i> Poole*	<i>d</i> Whitby
<i>d</i> Croydon*		<i>h</i> Port Erin, Isle of Man	<i>d</i> Wimbledon
	<i>d, h</i> Lancaster	<i>d</i> Preston	<i>d</i> Winchester
<i>a</i> Dalton-in-Furness	<i>d</i> Larne	<i>h</i> Prince's Risboro'	<i>h</i> Wrexham
<i>d</i> Darlington	<i>d</i> Leamington		<i>d, h</i> Windsor and Eton
		<i>d</i> Ramsgate	<i>d</i> Wisbech
		<i>d</i> Reading	<i>a</i> Wolverhampton*
		<i>h</i> Redcar	<i>a</i> Worcester
		<i>h</i> Redditch	<i>d, h</i> Worthing
		<i>d</i> Rhayader	
		<i>d</i> Richmond, Surrey	<i>a</i> Yarm
		<i>a</i> Ringwood, Hants	<i>d</i> Yeovil*
		<i>a</i> Rochdale	<i>a, d</i> York
		<i>a</i> Rodley, near Leeds	<i>d</i> Youghal

NOTE.—At the time of going to press we have not received signed authority for the use of “Dark-rooms” marked\*; but they were all placed at our disposal last year, and are doubtless available.—Ed. AM. PHOT.



APPLICATIONS for letters of introduction must be accompanied by **three penny stamps**. Full particulars are given as to charges (if any); plates, chemicals, etc., kept in stock by dealers; terms for temporary membership of societies, etc., etc.

THE OWNER of Dark-Room will be advised by same post as the applicant. In order to prevent delay, all applications should be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., and *plainly* endorsed "Dark-Rooms."

CONTINENTAL DARK-ROOMS.—Information can be supplied respecting many Dark-Rooms on the Continent, and addresses given of firms who stock photographic materials.

#### LABELS FOR BOXES OF UNEXPOSED PLATES.

The following list in different languages may prove of service to the tourist; it has been kindly supplied to us by Mr. W. E. Woodbury:—

*English*.—Sensitive photographic plates, which will be quite spoilt if opened in the light. Only to be opened in a totally dark room or by a red light.

*French*.—Plaques photographiques sensibilisées qui seront gâtées si on les expose au grand jour, par conséquent n'ouvrir la boîte que dans une chambre parfaitement obscure ou éclairée à lumière rouge.

*German*.—Photographische Trockenplatten, welche sehr lichtempfindlich sind Werden ganz verdorben wenn man sie dem Tageslichte ausstellt. Die Schachtel muss desshall nur in einem finsternem Zimmer, oder beim rothen Lichte geöffnet werden.

*Spanish*.—Las placas fotograficas sensitivas, que se inutilizan si se las expone al abrirlas a la luz del dia, se pueden abrir sin inconveniente en un cuarto enteramente obscuro o iluminado par luz roja.

*Portuguese*.—Laminas fotograficas sensitivas. Nao podem ser expostas á luz porque se inutilizam; podendo só ser abertas em camara, escura oce com luz vermelho.

## Reviews.

*Colour Measurement and Mixture*. By Captain W. de W. Abney. Published by the Society for Promoting Christian Knowledge, Northumberland Avenue, W.C., price 2s. 6d.

This little book belongs to the "Romance of Science" series, which, as the publishing society states, is "a series of books which shows that science has for the masses as great interest as, and more edification than, the romance of the day." Bearing this in mind, we are tempted to question whether Captain Abney's work will fulfil the object set forth, and we venture to think that it will not. The book is extremely readable, and leads us gradually through the whole subject of colours, giving succinctly the results of other investigators, as well as the author's own researches, but there is, we think, too much assumption that the reader is already acquainted with the fundamental principles of light and general science. We have read the book with great interest, and can thoroughly recommend it to all our readers, who will learn much of the most interesting of subjects, and one which is far more closely connected with photography than is generally supposed. The book is issued in good style, with a clear, easy-to-read type, and numerous illustrations are inserted to make the subject still more plain.

## Apparatus.

### POWELL'S PYRO DEVELOPOIDS.

MR. T. H. POWELL, of 116, Denmark Hill, S.E., has sent us a sample of his compressed pyro developoids, which we have tried with excellent results. They will form one of the most convenient adjuncts to the tourist's equipment, as it is merely necessary to dissolve one or two, according to the size of the plate to be developed, in water, and then the addition of four or six drops of liquor ammoniæ fort. 880 gives a pyro developer suitable for all brands of plates. The convenience of thus having pyro in such a portable form is obvious; there is no chance of breakage of a bottle of solution, and consequent staining of linen, clothes, etc., and the developoids are more convenient than dry pyro, being in smaller compass and no trouble of weighing or guessing. Comparative sensitometric trials prove them to possess equal developing power to plain pyro and considerably less staining property, and we can confidently recommend them as the most convenient form of developer for travelling and equally suitable for home work,

especially for those operators who prefer to make their pyro solution fresh each time.

### PAPIER VERMEIL.

Messrs. Cook, Shaw, and Co., of 15, Templeton Road, West Green, N., send us a sample of their new ruby medium "Papier-Vermeil," which they have introduced for dark-room windows. It is easily affixed, the window being well wetted and the medium being pressed into contact and rubbed flat from the centre outwards to remove air bubbles. It can be obtained in sheets 19 by 14 ins., post free for 1s. 3d., and should find considerable favour amongst our readers. We have practically tested the sample sent us, by affixing it to a sheet of glass in front of our lantern, and find that it gives a good safe light of great clearness, and a rapid orthochromatic plate developed for seven minutes, within 12 ins. of the same showed no trace of fog or veiling. The makers guarantee it to keep its colour, and at the price named it is by no means dear.

### THE "KOHN" TIME EXPOSURE MAGNESIUM LAMP.

MR. J. G. HUDSON has shown us some of the results to be obtained by the use of this lamp, which are most satisfactory. The lamp is so constructed that a series of flashes of instantaneous duration may be given, or one steady light kept up for thirty seconds. The magnesium powder is mixed with air before it reaches the flame, and so there is almost complete consumption and very little waste. The agent for the lamp is T. Newton, 77, Carlton Vale, Kilburn.

**The Woodburytype Co.**—Owing to the retirement of Mr. G. C. Whitfield, the senior partner in the Woodbury Permanent Photographic Co., Castle Bar, Ealing, negotiations have taken place which have resulted in Messrs. Eyre and Spottiswoode, Her Majesty's Printers, acquiring the whole of this business. Messrs. Eyre and Spottiswoode announce that they will continue to carry on the business under the same designation and with the same management as hitherto, and that with the improved machinery and all modern appliances, they will be prepared to give estimates and carry out all work entrusted to them.

**Naming Photographs.**—The question of "How to name or title photographs" is constantly being discussed. In a recent issue we referred to the "Nameit," which has been introduced by Mr. A. Gray, of 44, Snow Hill, London, E.C. That gentleman has now sent us a box fitted up complete with fount of indiarubber-faced type, holders, printing medium, films, etc. (See illustration.) The method of procedure is as follows:—

(1) Set the type up in the holder; to do this, begin at the end opposite the screw, placing the types in the holder upside down, or with the nick in the metal away from you; when all the types are in the holder see that they are well down and even before fixing the screw. (2) Put as much Filmite on the pad as the brush will hold—too much will blur the letters—try an impression on a piece of paper to see that there is no mistake. (3) Place the medium on a



sheet of blotting paper, holding it down flat with a piece of card (post card will do, as it will also answer as a guide to print the name straight), then press the type on the film, not too heavily, and holding it for a second or two to allow the film to absorb the Filmite, then remove the type gently. Allow the impression to stand a few seconds, then lightly dust the impression well over with the bronze powder, using for the purpose a piece of cotton wool or wadding; before dusting off, a piece of clean paper should be placed over the impression and the bronze pressed in by drawing the fingers along the back of the paper. The bronze can then be dusted off either with a clean piece of cotton wool or camel hair brush. (4) To fix the film, place the film with the bronzed side of the negative with name in position in which it is required to print, then touch either end with a little acetic acid (a splint of wood or end of a match will do), allow to dry, when it will be found that the film is securely fixed at either end. The acid will in no way injure the negative. When dry, the printing may be proceeded with. The whole apparatus is well made, and will be found of much use to amateurs.



## Quarterly Examinations in Photography.

**Question 13**—*Why are alkaline salts added to a toning bath, and explain the action of a toning bath?*

**ANSWER.**—Gold as used is auric chloride (or trichloride of gold, i.e., one atom of gold combined with three of chlorine),  $\text{AuCl}_3$ , and as chlorine has a greater chemical affinity for silver, the latter when present unites with the chlorine, and the gold is reduced to a metallic form; but according to the law of chemical combination (silver and chlorine combining equally) each atom of chlorine requires one of silver, hence for each atom of gold deposited three atoms of silver are used, and consequently there is a great loss of tone. To overcome this, the alkaline salt is used, which combining with two of the atoms of chlorine leaves the gold in the form of aurous chloride,  $\text{AuCl}$ , to exchange with the silver, but this time atom for atom, hence with little loss of tone.

The alkaline salt, therefore, is really added to alter the form of the gold salt so as to enable it to exchange with the silver with the least possible loss of tone, and it further neutralizes the free acid in the gold solution which is there as a preservative. The aurous chloride is very unstable, and the alkali if left with the gold unites with it, forming some double salt which is the deposit in an old bath.

S. N.

**Question 14.**—*Is it preferable to use a swing back or moveable front to a camera? State reasons for answer.*

**ANSWER.**—The moveable front as far as it will go. It is far easier to get the whole plate in focus when raising a lens than to do so when the back is swung to any serious extent. When I have been forced to tilt the camera to any very great extent, I have preferred not to swing my back, but to make a transparency from the resulting negative in the camera. It is easy with care to get an image perfectly free from distortion, by swinging the negative or back or both so that the effect of the original defect from the perpendicular is exactly done away with.

R. C. M.

**Question 15.**—*What are the chief causes of fading in prints?*

The chief causes of fading in prints are:—

- (1) Imperfect fixing. If any of the silver salt is left behind, it is sure to cause the prints to fade.
- (2) Imperfect elimination of the hypo. Any hyposulphite of sodium or of silver is very injurious to the print.
- (3) Too prolonged washing. Prints are much more likely to fade which lie in water twenty-four hours than those which are washed quickly.
- (4) By the use of a bad or acid mountant.
- (5) Mounting the prints on impure mounts, which contain injurious salts used in their manufacture.

There are said to be several other causes of fading, but these are the chief.

YXOL.

## ALLEGED PHOTOGRAPHIC NUISANCE.

LAST WEEK Mr. Justice Romer, sitting in the Chancery Division of the High Court of Justice, had before him the case of *Turner v. Elliott*. This was an action by Mr. Turner and others against Mr. Elliott, member of the firm of Elliott and Fry, to restrain an alleged nuisance caused by smell arising from the defendants' printing and dry plate factory at Barnet.

The smell complained of was stated to be caused partly by the storing of sensitised albumenised paper and partly by the use of liver of sulphur. Professor Tidy and Dr. Dewar, who were called on behalf of the defendants, gave it as their opinion that no possible nuisance could be caused to residents in the neighbourhood by the use of these materials.

Mr. Neville, Q.C., who appeared for the defendants, asked his lordship to disregard altogether the theory that any smell could arise from the gelatine used in the manufacture of dry plates, as it had been clearly shown that the least trace of impurity in this substance was absolutely fatal to the defendants' business and it was consequently to his own advantage that it should never be allowed to decompose. Mr. Justice Romer here interposed, and said that the case was one of extreme difficulty for a judge to decide, and that he thought that an independent witness should be sent down, who should make a report to him (the judge); this would save both parties great expense. He would reserve judgment till after he had heard the report.

Mr. Haldane, Q.C., for the plaintiff, agreed to this proposal, on condition that the defendant gave an undertaking to in no way change the processes employed meanwhile.

Mr. Neville gave the undertaking, and the case was adjourned till after the Whitsuntide recess.

## Societies' Meetings.

**Ashton-under-Lyne.**—On the 7th inst. the President, Dr. A. Hamilton, had on view at the Society's rooms a large collection of stereoscopic transparencies taken by himself during visits to the Continent, which were thoroughly enjoyed by a large number of members present. Dr. Hamilton was the winner of the last AMATEUR PHOTOGRAPHER Stereo Competition. The first ramble of the season took place on Saturday afternoon, but, owing to the inclemency of the weather, only fifteen members availed themselves of the out. The afternoon, however, turned out a success from a photographic point, and a very pleasant and enjoyable time was spent, upwards of seventy plates being exposed.

**Belfast Y.M.C.A.**—The annual meeting of the above Club was held on the 6th inst. There was a large attendance of members. The President, Dr. Coates, took the chair. The Secretary read the report for the past year, also the financial statement. The report was very satisfactory, and showed great progress during the year. The summer rambles were very well patronised, and very enjoyable they were. The new programme should prove attractive, as it embraces some of the most interesting photographic districts convenient to town. The winter meetings were more successful than ever before; the membership is still increasing. The Club now possesses two optical lanterns and a first-rate enlarging apparatus, which have been in constant use of members. The Treasurer was able to show a balance on hand, although the year had been one of exceptional expense. The following office-bearers were elected: President, Stanley B. Coates, M.D.; Vice-Presidents, William Swanston, F.G.S., and B. D. Wise, C.E.; Secretaries, James H. Hamilton, 3, Eden Terrace, Shankhill Road, James McCleery, 63, Royal Avenue; Treasurer, James H. Hamilton; Committee, William Strain, Robert McCann, Hamilton McCleery, John E. Pim, T. F. Bell, J. S. M. Best.

**Bournemouth.**—A meeting of the Photographic Section of the Bournemouth Society of Natural Science was held on Wednesday, the 6th inst., when four short papers were read, the first by Mr. Greenleaves on "Outdoor Group-taking." The errors to be avoided, as well as the objects to be aimed at, in a good group photograph were explained and illustrated by specimens. The second paper was by Mr. Piercy, on "Self-toning Paper;" about half-a-dozen prints on this paper were shown, all treated in a different way, with a view of finding the range of tone that could be obtained on it. The third paper was by Mr. Wm. Jones, on "Alpha Paper;" about a dozen prints on this paper were shown, illustrating the results obtained by different exposures and various methods of toning. The last was by Mr. Price, on "Stops;" various ways were mentioned of ascertaining the focal length of any lens, and how to value and mark its various stops. The question of large *versus* small stops was also dealt with. An interesting discussion followed the reading of the papers. It was announced that an exhibition of photographs would be held at the end of the month. Dr. Greves, President of the section, occupied the chair.

**Brechin.**—The last ordinary monthly meeting for the Session was held on the 5th inst. In the absence of the President, Mr. Wm. Stewart, jun., was called to the chair. Messrs. Stewart, Brown, Dakers, and Ross were appointed a Committee to revise the constitution and bring up recommendations to the annual meeting in September. It was intimated that the Committee had arranged to allow visitors to have the use of the reading-room and dark-room at the nominal charge of 1s. per month. The Secretary, Mr. J. D. Ross, read a short paper on "Stereoscopic Photography with a Quarter-plate Camera." Although not advocating the use of such a camera for the best stereoscopic work, he pointed out that a stereoscopic camera is not essential to the production of stereoscopic slides, and in proof exhibited a number of transparencies and other slides taken with a small camera without extra top for stand or any extra apparatus. Messrs. Stewart and Mackie spoke on the beauties of the stereoscope, and the passing of several votes of thanks brought the meeting and Session to a close.

**Brixton and Clapham.**—At an ordinary meeting held on the 17th inst., Mr. T. J. Bartrop, one of the members, gave a most interesting lecture entitled "A Tour in the Ardennes," illustrated by some eighty or ninety lantern slides taken with a hand-camera by the lecturer and his party on a trip last August. The lecture throughout was thoroughly appreciated by the members, and a hearty vote of thanks was accorded the lecturer for his enjoyable entertainment. On the 9th inst. the first outing of the season took place. The district chosen was Perivale, but the dulness of the day and the poorness of the scenery somewhat damped the ardour of those who took part. Some good views, however, were obtained of the church and rectory. The best position for this is from the meadow opposite, but for the benefit of other photographers it should be mentioned that the owner of this meadow threatened some of the party with prosecution for trespass. There are also a few pictures to be had along the canal. The next meeting will be held on the 21st inst., when a lecture will be given on "Hand Camera Work" by Mr. W. H. Powell.

**Croydon.**—The third half-day excursion was held on the 9th



inst., a party of members, conducted by the President, journeying to Merstham. In consequence of the dull light and gloomy mist prevailing, the attendance was less than would otherwise have been the case. The atmospheric conditions were found to be so unfavourable for photographic work that on arriving at the rendezvous, "The Feathers," the apparatus was left there, and members resolved themselves into a committee of inspection, a most enjoyable ramble being the result and several scenes noted for future use. Amongst other places visited was the interior of Gatton Church, with its wealth of carved wood of Flemish origin; the party also, by special permission of Mr. Coleman, inspected the far-famed marble hall, with its interesting objects of art. The gardens and terraces of Gatton House were also duly admired, and the more picturesque portions of the home-park explored. Had the weather only been propitious, several artistic and attractive negatives would have, without doubt, been attainable. Returning to the "Feathers," at Merstham, about six o'clock, a bountiful high-tea was enjoyed. Subsequently the Treasurer and President captained two teams for a set to at bowls, which afforded much unrehearsed fun. In spite of the dismal weather, all were delighted with the outing. At the same time it is to be hoped that Saturday afternoons will in the future, for the benefit of the amateur of photography, yield a more liberal amount of light and shade. The next excursion is to Mitcham, in charge of Mr. Blow, and leaves West Croydon on 16th at 2.30.

**Holborn.**—Mr. Frederick Brocas, Vice-President, presided at the usual weekly meeting of the above club held on the 8th inst. Mr. Arthur Lawton was elected a member of the club. Two representatives of the Autotype Company attended and gave a practical demonstration on the autotype or carbon process. After giving an outline of the method of preparing the tissue, the demonstrator went on to speak of the printing, which he characterised as the only obstacle to overcome in the carbon process. The development of the picture was to a great extent under control, but it was quite as well to have a properly exposed print. For this purpose he showed three actinometers, one, the simplest, acting by colouring a piece of silver paper to a standard tint. The other two were on a different principle, one having a numbered scale, and the other a scale of tiny negatives of varying densities. He then mounted some exposed prints, and developed them by placing in hot water and washing away the soluble gelatine in which the picture was buried. Development was then stopped by placing the print in cold water, and, after placing in a five per cent. solution of alum to thoroughly discharge the bichromate salt, it is thoroughly washed and hung up to dry. For negatives made in the ordinary manner, an additional operation becomes necessary; for if the printed tissue were laid down at once on its final resting place, the picture would be inverted. To remedy this, the exposed tissue is laid down on a temporary support, such as a thick paper with a hard, highly polished surface, from which it is finally transferred on to its intended support, such as an opal. The process is an extremely simple one, and recommends itself to all amateurs. Twenty members attended the club outing to Pinner on Saturday. Leaving Pinner, they walked to Ruislip, through Eastcot, passing an old inn with the curious sign "The Case is Altered." The walk was a very pretty one, and in fine weather would be a paradise to amateurs or the plate-makers. Last Saturday was rather dull, but a very enjoyable day was spent, some eighty plates being exposed, finishing up with an excellent tea at the "Swan" Inn, Ruislip.

**Ireland.**—The last meeting of this session was held on the 8th inst., Mr. Geo. Mansfield, J.F., President, in the chair. The medals, presented for the Society's annual competitions were awarded to Mr. John White in the four following classes, viz., historical pictures lantern slides, detective work, and the best set of pictures taken on excursions of the Society. Mr. Alfred Werner then read a carefully compiled paper on "Platinum Printing," and went exhaustively into the history of platinum, treating of its discovery in the Urals, and mentioned that traces of the metal had been met with recently in the streams in the county Wicklow. He then treated of its conversion to the use of photographic printing, and traced the various researches made by different workers down to the present day. In the course of his remarks, Mr. Werner exhibited a print that, in contact with the atmosphere, had developed entirely out while in the printing frame, needing no further treatment to complete it, and stated that it had been a day and a half printing. The lecturer subsequently developed a large number of platinotypes by both hot and cold baths and with a great variety of developers, and drew the attention of his hearers to a method he had worked out for converting an untuned silver print into a pure platinum print, it being floated on a bath composed of potassium chloroplatinate soluble oxalate and a certain amount of citric acid; this converted the picture into a rich black and white print but Mr. Werner said that the difficulty he had not got over yet was a suitable fixing agent.

**Lewisham.**—At the meeting on the 9th inst., Mr. A. H. Miles, Vice-President, in the chair, a short paper was read by Mr. H. M. C. Sprunt, Assistant Hon. Sec., on "Cycling and Photography." He advised members to invest in a diamond frame safety with ball head

and cushion tyres, and a quarter-plate or a 5 by 4 camera, in preference to the tricycle and larger apparatus; hand-cameras were of very little use to the cyclist. To carry the apparatus, he used two cases, one for the camera, which was strapped to frame in front of seat pillar, the other, carrying slides and lens, was slung from the shoulders, as if fixed to machine it was certain to cause pinholes. Next meeting, May 22nd, Mr. H. L. Davis will give a paper on "Flashlight Photography," when he will show a new apparatus he has just invented.

**Liverpool.**—The third ordinary meeting of the amateur photographic association was held on the 30th ult. There was a very large attendance. After several new members had been elected, Mr. Friese Greene's hand-camera was exhibited. Mr. J. A. Furnivel, of Manchester, afterwards read a paper entitled "The Optical Lantern, and what can be Done with it," giving several illustrations, which were warmly applauded.

**Liverpool Y.M.C.A.**—The monthly meeting was held on the 6th inst. Messrs. Schierwater and Ellis demonstrated with platinotype paper. Mr. Schierwater gave a detailed description of the process, then both gentlemen developed several prints with excellent results. Several of the younger members were surprised at the simplicity of the process, being under the impression that platinotype was a difficult process to work. The Secretary (Mr. J. C. Lee) exhibited a hand-camera he was making. Mr. A. Evans showed some excellent pictures on Kallitype and ordinary sensitised paper, taken on the members' visit to Colwyn Bay at Easter. Arrangements were made to hold the first field day of the season on Saturday, 9th inst., at Ince Woods and Thornton.

**Lowestoft.**—The latest addition to the many societies which flourish in Lowestoft is the creation of the Lowestoft and District Photographic Society, which has for its President, Mr. F. Mayhew, Chairman, Mr. Stringfield; Secretary, Mr. J. W. Roberts; and Treasurer, Miss A. L. Stringfield. There is a fairly strong list of members, and it is hoped that arrangements can be made with the Committee of the School of Art by which a technical class can be formed in connection with that institution.

**Morley and District.**—The usual monthly meeting was held on the 5th inst., the President (Mr. S. Atkinson) in the chair. The formal business being disposed of, the evening was spent in friendly criticism of work. Messrs. Atkinson, Tomlinson, Smith, Scott, and the Hon. Secretary contributed a good number of negatives and prints, and Mr. J. Sanderson showed some admirable enlargements on Fry's bromide paper. Samples of Otto Scholz's matt-surface papers were handed round, and a specimen print, printed through green glass, the colour of which was admired by all.

**North London.**—A meeting was held on the 21st ult., Mr. Oakley in the chair. This being a lantern night, a number of pictures were exhibited upon the screen by Mr. Grover, Mr. Hudson, and the Secretary, after which slides belonging to Messrs. Mawson and Swan were exhibited. Another meeting was held on the 5th inst., Mr. J. Traill Taylor, President, in the chair, when Mr. Howson and Mr. Agnew attended, and gave a demonstration on the making of "Lantern Slides." On the 19th inst. Mr. Newman will lecture on "High-speed Shutters."

**North Middlesex.**—Notwithstanding the cloudy weather, a fair number of members attended the field day arranged for Saturday, May 9th, to Highgate and district, satisfactory work being done. On Monday, May 11th, Mr. G. W. Marchant in the chair, a most interesting demonstration on the working of platinotype paper was given by a member. Prints from the frames were passed round for inspection, showing the depth of printing necessary, and were then developed. The bath was kept at about 75 degrees and in some instances, where the shadows were a trifle heavy, the dark portions were withdrawn from the developer, while the lighter portions were allowed to gather strength. Numerous questions were asked and answered. On Monday, May 25th, a demonstration on the working of Kallitype paper will be given by Mr. F. W. Cox, when visitors will be welcome.

**Richmond.**—At a special general meeting on the 8th inst., Mr. Cembrano in the chair, it was resolved that the Society should be called "The Richmond Camera Club," and the alterations in the rules consequent on the change were made. At the ordinary meeting which followed, the subject for discussion was "Fixing and Washing Gelatine Negatives." The Chairman opened the subject, and recommended the use of two separate fixing-baths in the case of valuable negatives. Mr. Ardaseer explained the chemical changes in fixing, and insisted on the importance of leaving the plate in the fixing bath a sufficient time for the insoluble bromide that was left in the film to be converted in the soluble form which could be washed out. Several other members took part in the discussion.

**Sydenham.**—There was a well attended meeting of this Club on the 5th inst, it being a members' lantern night. About one hundred and fifty slides were shown and were appreciated, especially some lent by the Secretary of the People's Palace Photographic Club. The President was in the chair.



## The Amateur Photographer's Tourist Index.

Back Numbers, Post Free, 3d.

THE "Tourist Index" gives references to back numbers of the AMATEUR PHOTOGRAPHER which contain Articles on "Holiday Resorts and Photographic Haunts," and in addition many other items of interest to the "Tourist Photographer" given in "Answers" or "Letters."

The Editor will be glad if ladies and gentlemen will kindly contribute short articles upon any places of photographic interest which may not be included in the following "Index"—

Aberdeen	...	Article	...	Aug. 19, '87
Abbotsford	...	"	...	June 1, '88
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" Valley of the	...	Article	...	July 3, '91
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*Note.*—Most if not all of the above numbers of the AMATEUR PHOTOGRAPHER can be supplied. For every copy required, three penny stamps must be sent to Messrs. Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

## Quarterly Examinations in Photography.

### QUESTIONS.

- Describe Warnerke's sensitometer, and state your opinion as to its reliability.
- What is an actinometer, and can the results of such an instrument be relied on?
- Give a table showing the relative photographic activity of the following lights: Sunlight, lime, electric, magnesium (ribbon and flash), gas, and petroleum.

(Latest Day for Answers—May 25th.)

#### RULES.

- Answers must be received on the morning of the Monday week following the publication of the question.
- All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.
- A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.
- Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.
- Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

*NOTE.*—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor. Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"

AMATEUR PHOTOGRAPHER,

1, CREED LANE,

LONDON, E.C.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

#### RULES.

- Write clearly and distinctly on one side of the paper only.
- Write each Query or Answer on a separate sheet of paper.
- Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
- All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
- The Editor does not undertake to answer questions by post.
- In answering Queries, correspondents are requested to mention, in every instance, the *number and full title of the query* referred to.

## QUERIES.

4679. **Elko and Hydro.**—Wanted, a formula for above; elko to be in 5 per cent. solution in water or methylated spirits, hydro to be in 5 per cent. solution in methylated spirits, using either carb. soda and potash mixed in 5 per cent. solution, or hydrate soda same strength. Give quantity of each for half-plate landscape work. Have found I cannot get any density with elko alone.—**VERDANT GREEN.**

4680. **Westminster Abbey.**—Am intending to photograph in Westminster Abbey, in the chapels. I use Edwards's plates. Should they be rapid, or the slow landscape plates, and with a small stop? What sort of exposure is required? I use a whole-plate camera and a Ross wide-angle lens. Any hints gratefully accepted.—**A. M. C.**

4681. **Snap-Shot Developer.**—Would Mr. F. Young kindly explain the snap-shot developer sent to the AMATEUR PHOTOGRAPHER of last week, as to the weight of grams into grains or drachms, and B solution of saturated soda, as to weight and quantities of water, and how to be used as a developer?—**NOVIS.**

4682. **Scilly Islands.**—Any information as to this part as a holiday resort would oblige, as to facilities for photographing boating, also some idea of comfortable hotels.—**T. FORB.**

4683. **The Dukeries.**—Will any one kindly give me a few hints as to spending a few days in this district, where to stay and what to see and photograph?—**DUPLEX.**

4684. **Septa Tones.**—What materials and what process are best for producing these with certainty on rough paper? I have tried Alpha rough, but cannot make sure of the tint and also it is not rough enough.—**DUPLEX.**

4685. **Llandrindod.**—For some information about Llandrindod and its neighbourhood as a photographic field, apartments, and hints in general I should feel grateful. I would also ask for like information about Trefriw, near Llanrwst, North Wales.—**NOSRAP.**

4686. **Cutting Paper.**—I should be glad if any one of your readers could inform me the best way to cut ten or eleven pieces of double albumenised sensitised paper size half-plate (6½ by 4½), out of a sheet of the same kind of paper measuring 17½ by 22½ in. without including in the name of the manufacturers and their trade mark, which is stamped on the edges round every sheet of paper and occupies a space of nearly ¼ of an inch wide very nearly all round every sheet of paper, put there as a kind of an advertisement by the manufacturers, which does the paper no good whatever. I have found it most inconvenient both in cutting the paper and printing on the paper from a negative ever since I have used it, and I dare say that I am not the only amateur photographer who has found it the same, as it generally happens for me and many others that the trade mark, etc., round one or two edges of each piece of paper which is cut from the edge of each sheet of paper comes either in the sky or some light foreground and completely spoils the print, and when trimming I have to cut off nearly ¼ of an inch so as to avoid this trade mark business, which makes the print measure 5½ by 4½ instead of 6½ by 4½, the proper size when trimmed and mounted.—**W. H. ELLIS.**

4687. **Reliable Half Plate Camera.**—Could any reader of the AMATEUR PHOTOGRAPHER give me the

name of a reliable half-plate camera, stating price.—**K. M. W.**

4688. **Instantaneous Shutter.**—Can any reader give me maker and price of instantaneous shutter which has dial indicating exposure in fractions of second for quarter-plate camera?—**INSTANS.**

4689. **Toning Aristotype.**—Will some one kindly give me a formula for toning aristotype or chloride of silver prints?—**FAILURE.**

## QUERIES UNANSWERED.

April 24.—No. 4638.

May 1.—Nos. 4647, 4648, 4653, 4654, 4655, 4657, 4658, 4659.

" 8.—Nos. 4665, 4668, 4671, 4674, 4675.

## ANSWERS.

4651. **Warwick and District.**—Buy a sixpenny guide-book. Stay at Leamington, which is most central for Warwick, Stratford-on-Avon, Kenilworth, and Coventry. Do not miss Guy's Cliff.—**STILLING-FLEETE.**

4661. **Gold.**—The gold you mention is sufficiently pure. See "Dictionary of Photography," page 83.—**H. LEACH.**

4661. **Gold.**—Put a half sovereign into a small evaporating dish in a hot-water bath, and pour on it ½ dr. of nitric acid, to which has been added 2½ drms. of hydrochloric acid and 3 drms. of water. After a few hours, during which the bath is kept at a gentle heat (mind the fumes of chloride, which are very suffocating), most of the coin will be dissolved. If any is left, repeat the dose of aqua regia made as at first, and again the third time, if necessary, after a few hours more. If any silver should be present in the coin, there will be a deposit of chloride, which will not dissolve, so don't let this deceive you. Dilute the solution, when complete, with distilled water, and add aqueous solution of sulphate of iron, 6 parts to 1 part of gold. The gold will be precipitated in the form of a black powder. Collect this, and dissolve it in aqua regia as at first. This is then pure solution of chloride of gold, free from copper. It should be evaporated to dryness, and then re-dissolved in water, one grain to a drachm of water. Half a sovereign weighs about 61 gr., of which 56 are pure gold, so there will be about 86 gr. of chloride of gold to dissolve.—**ANON.**

4661. **Gold.**—Take a half sovereign, and put it into a glass bottle that will stand heat, and place the bottle in a basin half full of sand; then mix in a glass measure 1 dr. nitric and 5 dr. hydrochloric acid, and add about 3 dr. of this to the gold in the bottle. Place the whole on the hob by the fire for about an hour, giving the bottle a little shake now and then, when most of it will be dissolved. Now pour off the clear liquid into a 15 oz. bottle, then add some more of the acids to dissolve the rest of the gold, then pour the whole into the large bottle. It must now be neutralised by adding a few small lumps of whiting, and then test with litmus paper. Fill up the 15 oz. bottle with water. You now have gold chloride consisting of 8 gr. to the ounce, and as much as is in eight 15 gr. tubes, and, if bought at a chemist's, would cost about 16s. The above is about the simplest way of making gold chloride, but, altogether, I think it is a very risky process, as it is no joke to lose a half sovereign, if by chance you go wrong. I should advise "J. W. W." to buy a 15 gr. tube, and put it into a 2 oz. bottle, and make up to 15 dr. with water, and use 1 dr. for one sheet of paper. This is what I do.—**P. R. S.**

4662. **Developer for Hand-Camera Work.**—See page 337 last week.—**H. LEACH.**

4662. **Developer for Hand-Camera Work.**—You cannot do better than use the formula recommended by Mr. Paul Lange, which is as follows:—

Washing soda ... .. 2 oz.  
Bromide of ammonium... .. 20 gr.  
Water ... .. 16 oz.

For use, take ½ oz. of above, and make up to 2 oz. with water, and add about 5 gr. of dry pyro. This will give you a very yellow negative, but the print will be all that can be desired. No acid bath required. If your image is slow in coming out, you can merely cover the plate up and leave it to act by itself.—**HINTS.**

4663. **Enlarging.**—Get the Optimus lantern, at 30s.—**H. LEACH.**

4664. **Focal Length.**—Instantograph lens, you mean. 8½ in.—**H. LEACH.**

4664. **Focal Length.**—If you mean the focal length of the lens, it is difficult to say offhand, but, generally, a half-plate lens is, or should be, about 8 in., or even more, but you can ascertain this for yourself by focussing something about 30 ft. away, and then measuring the distance from the diaphragm slot to the ground-glass screen, or, if only a single lens, from the lens to the focussing screen.—**HINTS.**

4666. **Plates, Preserving in Tropical Climates.**—Keep all your materials in as cool a place as possible, and in air-tight boxes.—**H. LEACH.**

4667. **Testing Shutters.**—Make a white mark on the wheel, then turn it round till it acquires a speed of one revolution per minute, and then expose. On



development, you will see what portion of a single revolution the white mark moved through during the exposure, when the speed of the shutter is reduced to a simple mathematical calculation. — H. LEACH.

4663. **Obernetter Paper.**—Either paper or glass is dirty. Is your glass thoroughly polished? — H. LEACH.

4669. **Obernetter Paper.**—Can sympathise with you over this. There is always an amount of uncertainty, in using a glass plate, as to whether there will be any sticking or not, but the writer has overcome this to a great degree by the use of an enameled plate, which can be obtained of any dealer, or a piece of ferrotype plate can be used, but before using that it is best to heat it well. — HINTS.

4669. **Obernetter Paper.**—In reply to "W.," if he will thoroughly clean his glass with hydrochloric acid or ammonia, rub the talc well in and wash under tap, in the meantime having passed paper through a saturated solution of alum and well washed, bring both together under water, squeeze, and set up to dry in warm place, he will not be troubled with prints adhering to glass again. I used to be fearfully bothered with your complaint till I dried the alum and hydro acid bath, and now they dry off as easy as can be. — X. Y. Z.

4669. **Obernetter Paper.**—Why try drying on glass, when better results can be obtained on ferrotype plates? Prints can then be dried in a few minutes in front of a fire and stripped without any trouble after first squeezing. If glass is preferred, there should be no trouble, after thoroughly cleaning and French chalking on the right side of the glass. Note that there is a right and wrong side to glass, which can be ascertained by rubbing the thumbnail across each side; the side presenting the greatest resistance is the wrong side. No amount of French chalking will induce a print to strip if put on the rough side of the glass. — KEYNSHAM.

4670. **Groups.**—A single lens is not suitable for this branch of portraiture. — H. LEACH.

4670. **Groups.**—Yes, you can use a single lens for both purposes; if you are considered the next best lenses to use when portrait lenses are not available. The distance and exposure is governed a great deal by the lens you use, as well as the size of the picture. You would do well to read Burton's book on photography, or one by Jerome Harrison. Gelatine plates are of varying rapidities, which naturally alters the time of exposing. If you find out the aperture of the lens you use and rapidity of the plate, by referring to Burton's book, you will find the time of exposure fully marked out for you. — HINTS.

4670. **Groups.**—With careful arranging, groups can be taken with a single lens in a garden, and also in a studio. The group should be placed in a slight semicircle, and don't have the features too near the edges, or they won't be clear. I have taken capital figure studies with a single lens, but I take good care not to have the figures too near the edges. Of course, a R.R. ought to be used, but a single lens is best for vignettes. It is impossible to give you the distances you ask for, as you do not give the focus of your lens, but the smaller you want your picture to be the farther your sitter must be from the camera. As to exposure, I should advise you to use  $f/13$  or  $f/20$ , and give about 4 sec. in diffused light, but be guided more by the light. You don't say what rapidity your plates are. I have given you the time for 30-times plates. — P. R. S.

4672. **Names on Negatives.**—See answer No. 4646 last week. — H. LEACH.

4672. **Names on Negatives.**—The best way to write names on negatives, so as to print white, is to lay the negative on a piece of paper film side up and write on the film with a very fine brush, using either red or chrome water colour, which can easily be wiped off if not liked. Of course, the title must be written backwards, so as to print the right way. — P. R. S.

4672. **Names on Negatives.**—This is very easy to do. Take a pen, or, preferably, a brush, and write on the negative, gelatine side, backwards, with some opaque liquid, such as red paint (using thick). Or, if this is troublesome, write it on the other side of the negative, the right way when you can easily trace it on the other side. Or another way is, if you possess a rubber stamp set, take an imprint of the writing you desire on the print, and, whilst wet, transfer it to the gelatine side of the negative. — HINTS.

4673. **Pyro Developer.**—You cannot do better than use the one given under 4662, or, if you desire one that will give clear negatives, use the following (Wratten's formula):—

Solution A.			
Sulphite soda	...	...	1½ oz.
Water	...	...	20 "
Sulphuric acid	...	...	15 minims.
Pyro	...	...	2 drms.
Solution B.			
Washing soda	...	...	1½ oz.
Water	...	...	20 "

To use, equal parts. — HINTS.

4673. **Pyro Developer.**—In reply to "H. S. B.," I should say that, first of all, he was over-exposing, and, secondly, that he was using too little pyro for landscapes. He might try two parts of No. 1 to one part of No. 2. I think, however, his formulae are

open to improvement. He will find a list of proportions for several of the plates in the market at the end of the "British Journal Almanac" for 1891, referred to the cune of developer. The following is, however, a useful proportion: 2 gr. pyro, 2 minims of ammonia, and ½ gr. of bromide of ammonia. He might make up the bromide and ammonia in a solution, and, at the time of development, add the pyro dry thereto. Or a better way is to make up 10 per cent. solutions of ammonia, bromide of ammonia (or bromide of potassium), and pyrogallol, and use them in proportions as required for the subject. Pyro, in this case, requires a preservative, and he might try a sample bottle, price, I think, 6d., from the Platinotype Co., Southampton Row, Holborn, London, and see how he likes it. This is made up with sulphite of soda. "H. S. B." had better buy a book on photography treating of development; there are many good ones, and full details would take up too much space. — J. G. P. VORREKER.

4676. **Negative for Process Work.**—Under-expose, and intensify with a strong intensifier. — H. LEACH.

4677. **Lens for Hand-Camera.**—If the hand-camera does not allow of any focussing, the lens would not be likely to suit. — H. LEACH.

4677. **Lens for Hand-Camera.**—You must bear in mind that the lens used must be of the length the camera is made for, or the plates will be out of focus. — HINTS.

4678. **Brass Work.**—Steam the brass work just before exposing. Use a light background. — H. LEACH.

4678. **Brass Work.**—Keep the subjects of your pictures away from the light as much as possible, and use a thickly-coated plate, and it would be as well to back it with a burnt sienna and gum backing, to prevent halation as much as possible. The best background to use is one that will show your subject up to the best advantage, that is to say, use a dark one for a light subject, and vice-versa. — HINTS.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us before TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret. — ED: AM: PHOT:

PHILIP B. DURNFORD.—Thank you very much. ELSIE.—You should have sent prints from the half-plate negatives, and not reductions. They appear to be very fair work, and are good in composition. You must make your own selection as to which to enter in our Monthly Competition.

F. C. BARTON.—Dallmeyer's triplet lens consists of three achromatic meniscus combinations, the two outer ones being convergent, the middle one being divergent. When used for landscape or outdoor work the smaller of the combinations should be placed towards the object; when used for enlarging, the larger combination. The central and divergent combination may be removed and the two outer combinations used alone, in which case the focal length of the lens is halved and its rapidity, or  $f/z$  ratio aperture, obviously much increased, but the field is then so curved as to permit of but limited use. The ratio aperture of the complete lens is  $f/10$ . Monckhoven gives the following as the advantages of this lens: (1) With equality of focal length it covers sharply a focal plane much larger than the ordinary single objective. (2) It is, within practical limits, free from distortion, but not from astigmatism. (3) It is free along its axis from spherical aberration. (4) With a diaphragm the thirtieth of its focal length it covers sharply an extent of focal plane of which the greater side equals its focal length, and this aperture of the diaphragm is sufficient for giving brilliant images. If, from insufficiency of light or from any other cause, the diameter of the diaphragm has to be increased, the sharpness of the image does not decrease but only the extent of the surface sharply covered.

W. M. B.—(1) Your sitter should be about 3 feet from the background. (2) Six feet is ample for operator to work in; we have before now worked in half that distance without inconvenience. (3) The most suitable lens for your work would be Suter's portrait lens, No. 4 rapid series; this has a focal length of 8 ins. and an aperture of  $3\frac{1}{2}$  ins., or practically it works about  $f/2\frac{1}{2}$  and requires only 13 feet between sitter and lens for full-length cabinet. This is one of the finest and most rapid lenses yet made. Suter's No. 5 of same series is  $9\frac{1}{2}$  focal length and same aperture, but requires 15 feet between lens and sitter. Either would suit your purpose, but the former, No. 4, is, of course, more rapid. Gotz, of 19, Buckingham Street, Strand, is the English agent.

UNUS.—(1) Sulphuric acid diluted with 4 parts of water, or a solution of chloride of lime used with pumice stone powder. (2) Hubert's is the best book. (3) Burton's "Notes on Photographic Optics," price 1s., from our publishers, would probably suit you.

F. TURNER.—We are frightfully cramped for space

just now, but will try and let you have what you want soon.

F. PARTRIDGE.—We hope to give you an article in a week or so. Send us up a print which shows the fault you complain of.

F. W. REYNOLDS.—Probably your thin negatives are due to over-exposure, but this we can hardly say without seeing them. The exposures given in tables are applicable to both single and double lenses. You cannot avoid the consumption of the wick of the lantern; deficient air supply will cause rapid burning of wick.

J. DOUGLAS.—To find out the difference of exposure between a lens of 7 in. focus and one of 5 in. focus with same size stop, divide the foci by the aperture of stops, square the result, and the numbers thus obtained will give you the relative exposures. Example: You have a 7 by 5 in. focus lens and are using a stop with  $\frac{1}{2}$  in. aperture.

$$\frac{7}{\frac{1}{2}} = 14; 14 \times 14 = 196.$$

$$\frac{5}{\frac{1}{2}} = 10; 10 \times 10 = 100.$$

Therefore your exposures will be as 196 : 100, or practically as 2 : 1.

H. S. W.—We have examined the paper, and you might use it with safety for wrapping negatives in, but not for wrapping undeveloped plates.

A. B.—You would find a description of the iconometer in the "Dictionary of Photography," page 271, second edition, with diagram and measurements, and foci of lenses, from which any optician could make you one for about 5s. Write to Mr. Platt, Birkbeck Works, Dalston.

G. C. J.—The question is one which has been thrashed out before in our correspondence columns. If the solution of chloride of gold is neutral, then a small quantity of borax only is needed, whereas if it is acid, a larger quantity is required to neutralise the free acid and render the bath alkaline. There are three states of toning bath—acid, neutral, and alkaline—and much depends on which is chosen, when deciding the quantity of salt to be added.

F. M. Y.—The choice of the lens must depend upon the class of work that the hand-camera is required to do, and also the same rule must apply to the use of diaphragms and quick shutters. The combined elkonogen and hydroquinone developer is recommended for instantaneous hand-camera shots, for general work, and diluted for lantern slides. We have not found that it gives such clear glass as you lead us to believe for landscape work, if the plates are over-exposed or over-exposed. When under-exposed, it has, like all other developers, a tendency to clear glass, but as the colour of the deposited image is less non-actinic than with pyro, there is not such extreme hardness or contrast between the lights and shadows, and the results obtained are superior to the simple hydroquinone developer. If we can give you any assistance re hand-camera work, send us up some definite questions, when we may be able to give definite answers.

T. LIBLE.—Your toning bath should be at least twelve hours old before using, and the hypo made distinctly alkaline by the addition of ammonia or of carbonate of soda. Add  $\frac{1}{2}$  oz. of the latter salt to every pint of fixing bath. Your prints have been printed in the sun; never do this. Let us hear from you again.

J. R. W.—Almost every month sees some new hand-camera placed upon the market, and, consequently, there are plenty which can almost be had for the asking. Still, it would do no harm to offer yours to some maker. Will write you later on.

SHADOW.—First we will find all the faults in your portrait, then help you by some hints. Your sitter is too near the background, and the texture of the blanket shows too plainly. The sitter was opposite the window, by no means the best position. The lens is of too short a focus for such a large head, which is about 2½ in.; this means a reduction in size of one-fourth. The focus of the lens would therefore be lengthened to 9½ in.;  $f/16$  would therefore become  $f/20$ , which would account for the long exposure. Place your sitter more on a slant with the window, and use a sheet as a reflector for the shadow side of face. You will find, in our recent notes on home portraiture, full directions on this point; but if you will send us a rough plan of your room and a stamped addressed envelope, we will mark the most suitable positions for sitter and camera.

PYRO.—No. 1 negative shows signs of movement, and is over-exposed. About half a second would have been plenty; the plate is also fogged in developing. No. 2 is also over-exposed and fogged in developing; even less than half a second would have sufficed for this. Try again, and send us some more negatives. Two grains of pyro is plenty for a quarter-plate.

G. K. T.—We do not agree with you as to the position of the intercepting diaphragm. As you use it, it practically becomes a diaphragm, and unnecessarily slows the lens.

S. C. BRIGHT (Genoa).—We are always pleased to help any of our readers, and we do not mind the length of their letters. No. 1: The negative is well exposed and well developed, the gradation of light and shade good. We should have preferred to cut off an inch of the foreground, and waited to get a country cart or group of native women in the road, instead of the solitary individual. The warm tone is pleasing and suitable. No. 2 is not quite so happy,



but it is a very trying subject. In this we should just take off half an inch of foreground, and put the camera rather more to one side of the road, and put the figures nearer the camera. No. 3: Too small a stop was used, and a little longer exposure would have given you more detail, both in the foreground and left of bridge. The house is a little too sharply focussed, consequently the bridge does not stand out quite enough. We accept the prints with many thanks, and note your kind offer of dark-room. Send us on as many prints for criticism as you like, only would it not save your postage not to mount them?

**ALPERUM.**—We are much obliged for your kindness in sending the two exposed plates. We will return you the box and the plates developed at the same time. We shall be glad to have the bromide prints; you will see when the time arrives. Glad to hear you like the AMATEUR PHOTOGRAPHER and its Annual.

**F. J. H.**—We shall have some articles shortly on this subject. But the plate should be back all over before fixing. Each developer gives a peculiar character to the negative. Judging from the negative, your lens does not cover sharply to the corners of the plate, otherwise it would make a very fair print on chloride emulsion paper.

**O. D.**—Baker's parallel trimmer is sold by Mr. W. R. Baker, of Wallington, Surrey. The prints should be mounted in light albums.

**T. G. VIVIAN.**—Another year we will consider your kind suggestions.

**A. W. COOK.**—About "too much density" write to the Britannia Works Company; they can answer the question much better than we can. We will give a formula for uranium toning bath next week.

**H. LEACH.**—The "Quarterly Examinations" will certainly be continued. Many thanks for your assistance in the Query and Answer columns.

**W. H. BARRETT.**—Eikonogen; use Paget's xxxxx.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

**Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.**

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

**Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.**

**Burnishers.**—Lancaster's half-plate burnisher, perfect order; cost 21s.; price 15s. — H. Kinnaird, 171, Caledonian Road, London.

**Cameras, etc.**—Modern whole-plate camera, all movements, three slides in covers, lock case, adapted for half-plate, with three Tylar's slides in covers, all perfect; 105s.—Rev. Christie, Rectory, Newtown-stewart, Ireland.

**Tourists' half-plate double extension camera and two backs, excellent order, Gem time shutter, photometer; £3 10s. lot, or separate.**—Lewis, 43, The Grove, Vauxhall.

**Half-plate Lancaster's extra-special long-focus camera and three double backs; cost £5 10s.; will accept £4; good as new.** — Pain, Kingswood, East Sheen.

**Birmingham.** Whole-plate Ashford's best camera and four slides.—Thorpe, Congreve Street. £7 7s. half-plate camera for sale, splendid condi-

tion, three double dark slides, etc.; what offers?—A. Wolfe, Abbotsholme Rochester, Stafford.

**Cameras, Lenses, etc.**—For sale, the property of a private gentleman, all in good condition; offers requested; may be seen at Stanley's, 13, Railway Approach, London Bridge, S.E.: Whole-plate bellows camera, one single and three double backs, Dallmeyer lens 3D, 7½ by 4½ bellows camera, with one single and six double backs, one light sliding tripod stand, two plate boxes, 7½ by 4½, and six light-tight ditto, three 5 by 4 plate boxes and two light-tight ditto, one 3½ in. lantern condenser, also a quantity of dry plates and good apparatus for electrical experiments.

5 by 4 camera, leather bellows, dark-slide, with two inner frames, new, fitted portrait lens (by Lerebours), rack and pinion, covers half-plate, complete; 35s.—W. C., 13, Cobden Street, Everton Road, Liverpool.

5 by 4 bellows camera (by Cox), three double backs and one single, also 5 by 4 portrait lens, thorough good instrument; the lot 50s.—Pyro, 17, Storey Road, Walthamstow, Essex.

**Quarter-plate Rayment camera, three dark-slides, and Optimus 5½ in. focus Euryscope lens, with Iris diaphragm, all in splendid condition, and fitted up in best leather-covered box for use as hand-camera, or can be used on tripod; Mr. Paul Lange's fine pictures of Norway and Iceland were taken with a similar apparatus.** — Address, F. Bell, Hahnemann Hospital, Hope Street, Liverpool.

**Half-plate Thornton-Pickard new Ruby camera, three double dark-slides, Thornton-Pickard time and instantaneous shutter fitted to front, turntable top, 3-fold tripod for same, list £8 8s., will accept six guineas, warranted; Ideal detective camera, quarter-plate, with Taylor and Hobson's lens, Iris diaphragm, cost about ten guineas, price six guineas, almost new.—3, Montford Place, Kennington Green.**

**Watson's half-plate B camera, complete with £4 Iris lens, case, stand, accessories, quite new; cost £14; what offers?** — Apply, T. R., 1, Hampstead Lane, Highgate, N.

**Whole-plate Lancaster's Instantograph, one wood, three metal double slides, lens, shutter, tripod, leather bag; cost £8; lowest price, £5.**—Address, F. J., care of Mr. Crowther, Dukinfield.

**Whole-plate light Kinnear camera, all movements, three double slides, R.R. lens (by Wray), 11 in. focus, new combination lens (by Beck), 7 in. focus, ash tripod, leather-bound and canvas cases, printing sundries, etc.; £15.** No. 158, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Baroness camera, quarter-plate, most fairy-like instrument, every possible movement, new last autumn, perfect condition, fitted with Eastman's roll-holder, quite new, Beck's rapid rectilinear lens, Iris diaphragm, 4-fold stand and solid leather case; price £9 10s.; cost £13 10s.** — W. Thomson, Laurel Bank, Halifax.

**10 by 8 long focus conical camera, with all movements, three double slides in cases, whole-plate rectilinear lens and stops, two 10 by 8 Eastman's film-carriers, two sets of carriers for whole and half plates, very little used; lot for £8, as owner has just got a 15 by 12.**—Arthur F. Smith, 10, Watling Street, City.

**Hare's 5 by 4 new long-extension camera, reversible holder, three double slides, Eastman roll-holder, tripod stand, focussing cloth, view-finder, solid leather case, cost over £13, price £10; Dallmeyer's 5 by 4 rapid rectilinear and Thornton-Pickard shutter, cost £5 8s. 6d., price £4 10s.** All the above are absolutely new, bought last month, and sold on account of owner purchasing larger set; approval.—Apply to Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C.

**Hand-Cameras, etc.**—Rough's Eureka quarter-plate, green leather covered, 5 by 4 lens (Kouch), working f/3, two finders, mill screw to shutter, instead of separate key, whole intact; price £5 5s.; would cost £8 8s. new.—Solicitor, 33, Walbrook.

**Kodak for sale, cost £5 5s., about 40 unused films; price £3.**—Dr. Hodges, Park Road, Gloucester.

**Wray's splendid Wellington hand-camera, 5 by 4 lens, Wray's rapid rectilinear, Iris diaphragm, shutter front of plate, finders, focussing screen, six double backs; cost 12 guineas; sell 6.** — No. 158, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Quarter-plate Magazine hand-camera, Perken, Son, and Rayment's Euryscope lens, cost 8 guineas, nearly new; £6, case included.** — On view at the AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Rough's Eureka detective camera, lantern size, in leather case, almost new; cost £6 10s.; price £4.** Can be seen at the AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Underwood's City hand-camera, carries 12 quarter-plates, as new; 20s.; cheap.**—Dorset Villa, Yeovil.

**Quarter-plate hand-camera, as new, Hethion Lewis pattern (by Turnbull), suits lens of 5 by 9 in. focus, six double backs, cost £8 5s.; with Taylor's Iris diaphragm lens, five guineas; camera alone £2 10s.; lens alone, three guineas; approval; deposit.**—S. E., 2, Wellington Terrace, Weston-super-Mare.

5 by 4 mahogany hand-camera, with one dozen 5 by 4 carriers and one dozen quarters, carries ten

plates, Lancaster's lens, shutter, and finder, plated fittings; take 40s.; a bargain; photograph sent.—Frederick Sharpe, Oakham.

**Hand-camera, first-class, six double dark-slides, lens, finder, and roller-blind shutter, in thorough working order; price 50s.** — T. Mercer, 16, King Street, Sparkbrook, Birmingham.

**Kodak, No. 4 Junior, quite new, takes pictures 5 by 4; cost £10 7s. 6d.; price £9, or exchange.** Wanted, 12 by 10 camera and three double slides.—F. W., Woodland Place, Haling Place, London, W.

**For sale, No. 2 Kodak, good as new, fully charged; £5.**—Perry, Stratton, Corwall.

**Lantern.**—Lantern, nearly new, good lenses, suitable for photographic slides, 3-wick paraffin lamp; price 28s.—T. G. Hyde, 97, Jerningham Road, New Cross.

**Lenses, etc.**—9 by 7 Optimus landscape lens; 32s. 6d.; good as new.—W. Norgrove, Kingsley Road, Cutham, Bristol.

**For sale, Dallmeyer's 5 by 4 R.R. lens, new condition; £3 8s.**—Address, Barr, 19, Bloom Street, Edgely, Stockport.

**Grubb's portrait o.d.v., A2, cost 90s., for 30s.; Suter's B4 R.R., cost 100s., for 65s.; Wray's 5 by 4 R.R., Iris, f/5.65, cost, nett, 58s. 6d., good as new, 50s.; Optimus portable symmetrical, 5 by 4, perfect, 29s.; fine 5 by 4 R.R., 21s.** — Christie, Newtown-stewart, Ireland.

**Adams' whole-plate R.R. lens and drop shutter, as new, 45s.; cabinet burnisher, 7s. 6d.; 75 numbers AMATEUR PHOTOGRAPHER, current to date, 6s., or offers.**—Arthur Jane, Bodmin, Cornwall.

**Two half rapid rectilinear, one with shutter, perfect definition; together 45s., or offers separate.**—W. Holt, jun., Dabury Park, Didsbury.

**Rapid rectilinear, 7 by 5, covers plate well, 19s. 8d.; cabinet portrait lens, focus about 8 in., lenses about 2½ in. diameter, 30s.; both lenses (by Gillett, London) give capital definition; approval.**—Drake, Amherst Villa, Polsloe Road, Exeter.

**Dallmeyer's 10 by 8 rectilinear landscape lens, £8; Eastman's whole-plate roll holder, latest pattern, £3 10s.; both very little used.**—Dr. Winter, 4, The Birkenlands, Hilsa, Cosham.

**10 by 8 rapid rectilinear lens, £3; 10 by 8 wide-angle, rotating stops, 50s.; half-plate rectilinear, £1, complete with stops, etc.; approval.** — Fowler, Estate Office, East Street Buildings, Manchester Square, W.

**Lancaster's quarter-plate 1890 Instantograph lens, shutter, double slide, and tripod, all as good as new; 30s.**—Ernest Hawkins, 10, St. Domingo Vale, Liverpool.

**Half-plate view lens (Taylor and Hobson), excellent definition, also Tylar's current producer for washing prints and plates of all sizes, both in good condition; 20s.; cost more than double.** — Adams, Ware, Herts.

**Lens, rectilinear, 7 by 5, covers grand to edges, hood, stops f/3 to f/32; 25s.; approval.** — Adams, Hermitage Mews, Stamford Hill.

**Wray's 8½ by 6½ W.A. landscape lens, Kershaw instantaneous shutter, whole-plate size, and whole-plate strong sliding tripod, in first class condition; what offers in cash?** — W. Milburn, Brunswick Street, Carlisle.

**Lenses, Taylor's rapid view and portrait, for half-plates, Iris stops, new; bargain, 28s. 8d.; cost 38s.**—Hethion Lewis, Lansdowne Street, Brighton.

**Sets.**—Quarter-plate photographic apparatus; cost £8; price £3.—7, Dereham Road, Norwich.

**Shutter, etc.**—Phonix shutter, cost 15s., take 10s.; also focussing magnifier, cost 4s. 6d., take 2s. 6d. — Smalley, Victoria Street, Blackburn.

**Shutter, Lancaster's 1890 Chronolux, cost 30s. three weeks ago, perfect; approval; deposit; take 25s.** — Rev. R. Cobbold, Macclesfield.

**Thornton-Pickard time and instantaneous shutter, half-plate, with fan and speed indicator, cost 29s., specially made to order; 15s.**—W. J. Barker, Woodseley View, Leeds.

**Shutter, Newman's, fit Dallmeyer's whole-plate R.R. lens; 15s. 6d.**—L., 185, Aston Lane, Perry Barr, Birmingham.

**Slides.**—Complete set six quarter-plate Tylar's metal slides, with ground-glass, new last year; 11s.—S., Aysgarth Vicarage, Bedale.

**Sundries.**—Walking-stick stand, ball and socket head, adjustable height, one of best in market, good as new; cost 30s.; price 20s.—H. Cheshire, 9, Great Tower Street.

**Locomotive slide valve engine, with circular railway, complete, perfect, almost new; exchange No. 3 Kodak, or sell cheap.**—Bux 1, Mallow.

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**Tricycles.**—Coventry Machinists' special tricycle, front steerer, with all improvements and accessories, as new; recently cost £21; take £8, or part photographic apparatus.—A. D. Clarke, Pailton, Rugby.

Stassen's Nonpareil telescope side steering tricycle, suit lady or gentleman, very little used, ball bearings to all wheels and crank axle, powerful band brake, closes to 29 in.; take £8; with lamp and other sundries; seen any time by appointment.—Blizard, 105, Cambridge Gardens, North Kensington, W.

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"Amateur Photographer," etc.—The AMATEUR PHOTOGRAPHER sent in exchange for "The Irish Cyclist."—F. Lyons, Mallow, co. Cork.

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**Dark-slides.**—Quarter-plate dark-slide for Lancaster's Instantograph, cheap.—L. B., 50, London Road, Leicester.

**Hand-Cameras, etc.**—Facile hand-camera, R.R. lens, 1891 preferred.—T. Watson, Mulgrave Lodge, near Whitby, Yorks.

**Lenses, etc.**—Quarter or half plate cheap R.R. lens.—Particulars to Nicbo, 11, Windsor Road, Jersey.

**Set.**—Lancaster's half International set, with R.H. lens, or lens only, cheap.—Pridden, Jeweller, Weymouth.

**Sundries.**—Offers wanted, in half-plate photographic apparatus and cash, for my 52 in. Special Club roadster, cost £21, plated all over, ball bearings, good condition, with accessories.—Letts, 2, River Street, Bedford.

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No. 346. VOL. XIII.]

FRIDAY, MAY 22, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.*

**OUR VIEWS.**—The Federation of Photographic Societies—The Thames Trip—Amsterdam International Photographic Exhibition—Resuscitation by Oxygen—Leeds Photographic Exhibition—Exhibition and Competition at Sutton—A Day with an East-end Photographer—The Photographic Craze—Two New Developers—Collodio-bromide and Silver Emulsion—Collotype and Amateurs—Celluloid—AMATEUR PHOTOGRAPHER Prize Lantern Slides—What is an Amateur?

**LEADER.**—Home Portraiture.

**LETTERS.**—Explosion on a Gas Regulator (W. H. K. Soames)—What is an Amateur? (Yxol and S. N.)

**COMMUNICATED ARTICLES.**—Composition, and Light and Shade (Robinson)—Construction and Uses of Photographic Lenses (Leaper)—Chemistry for Photographers (Harrison).

**NOTES.**—Thursday Evenings at the Camera Club—Amateur Albums—Edinburgh—Feer's Diazo Process.

**REVIEWS.**—Die Chemischen Wirkungen des Lichtes, Photochemie, Spectralphotographie, etc.

**THE PICTURE GALLERIES.**—Nineteenth Century Art Society.

**AMATEUR PHOTOGRAPHER** List of Dark-rooms.

**APPARATUS.**—Cusworth's "Repeater" Hand-camera—The "Tension" Hand-camera.

**QUARTERLY EXAMINATIONS** in Photography.

**SOCIETIES' MEETINGS.**—Birkenhead—Blackburn—Bradford—Bolton—Cambridge—Croydon—Micro.—Glenalmond—Guildford—Hackney—Holborn—Jersey—Paisley—Peterboro'—Phot. Soc. of Great Britain—Sydenham—Wakefield—Wolverhampton.

It will be remembered that through the efforts of Mr. Lewis M. Biden a society for the federation of photographic societies for mutual help was formed, and we believe a considerable number of societies will, by this means, derive much benefit. Mr. Biden has addressed the secretaries of the photographic societies, in view of a meeting to be held on the 25th inst., upon the following very pertinent matters:—

"Can you place a dark-room at the disposal of any member of a federated society who may be visiting your neighbourhood, as was so kindly done by the Yarmouth Society last year?"

"Will any of your members place a set or sets of lantern slides, lecture, or paper, at the disposal of any other society for one or two evenings' entertainment? Have you not had some paper read before your Society that is worthy of repetition—particularly if with the author's illustrations?"

"Could your Society undertake to be represented by say six or twelve sets of photographs, framed, or mounted only, to be lent to other societies for exhibition purposes, and not for competition? The smaller societies find considerable difficulty in getting sufficient exhibits, indeed, some have had to give up intended exhibitions simply for this reason. I need not dilate on the educational value of such

a loan collection in affording our less advanced brethren an opportunity of studying good work from other districts."

To us there certainly seems ample work for a central society or a federation of societies. The larger photographic societies have so much business of their own to attend to that there seems a difficulty in their lending their lesser brethren a hand, and we can quite understand that the mere fact of allowing other societies to have certain privileges when affiliated to them does not meet the views of a man so active and desirous to advance the good of the greatest number interested in photography as is Mr. Biden. We wish him every success, and feel sure that if provincial secretaries will throw in their lot, heart and soul, with the federation scheme much good will be done for all.

A VERY effectively got up little pamphlet, "The Thames Trip," and a courteous invitation from Messrs. Salter Bros., of Oxford, remind us that the "Summer trips on the River Thames have commenced." A more delightful trip for those who love river scenery cannot be desired; the whole journey from Kingston to Oxford presents scores of pictures to the photographer. The journey is done easily, spending one night at Henley on either journey. The frequent stoppages in going through the locks give ample opportunity for those who wish to photograph. The steamers are fitted up with dark-rooms, etc., and the captain of each craft, if not a photographer himself, knows exactly what the amateur photographer wants to know. Some particulars of the trip will be found in the AM:PHOT: vol. xii., September 19th, and we shall hope to give a short account later in the season, when we hope to avail ourselves of Messrs. Salter's invitation.

AN International Exhibition of photographs and photographic apparatus will be held at Amsterdam next September. The art section will be open to amateurs and professional photographers. We understand that it is twelve years since such an exhibition was held in Amsterdam, and the scheme is causing a considerable amount of excitement. All particulars may be obtained of Mr. C. Y. Schuwer, 72, P. C. Hooftsh, Amsterdam. We are authorised to say that Mr. Schuwer will be very pleased to give any help to amateur photographers visiting Holland, advising them as to best routes, etc. There are at present three photographic societies in Holland, at Haarlem, Gronnigen, and Amsterdam. The chief or national society, open alike to amateurs and professionals, is at Amsterdam.



THE *Nineteenth Century* for May contains an article of interest to photographers. "Resuscitation by Oxygen," by Lieut.-Colonel Henry Elsdale, R.E., serves a twofold purpose, the first, as its title would denote, *i.e.*, the use of oxygen for the saving of life, or the resuscitation of persons apparently dead, and which Colonel Elsdale proves conclusively is far more active in its work than any other known means of artificially restoring respiration; the second purpose of the article is to caution the users of compressed oxygen, as to its dangers and the precautions to be taken. This part of the article is at the present time of such peculiar interest that we shall be pardoned for quoting at some length:—

"Oxygen, as is well known, has a great affinity for metals. It will not, however, attack the metal of the steel reservoirs and valves, in its cold or normal state. But it is extremely dangerous to expose the oxygen under these high pressures to any oil or any hydrocarbon whatsoever, as it has a still higher affinity for them. Now pressure-gauges or dynamometers for determining the pressure of gas or steam, as ordinarily constructed and used, are lubricated internally with such oils. When the oxygen reservoir has been partly emptied by use, there is a natural temptation to determine how much oxygen may remain in the vessel by applying such a pressure-gauge to determine the then existing pressure. The danger of this course may be best illustrated by an accident which I have known to happen more than once. The oxygen, rushing into the pressure-gauge, comes suddenly in contact with the lubricating oil. Its powerful affinity for the hydrocarbon, combined with the sudden rush, is too strong for it. The result is a very violent explosion, which blows the glass or the gauge, and probably its metal case also, into fragments. The glass is driven all around in small pieces, at the imminent risk of blinding the bystanders. But the explosion, once started, does not stop there. The heat, and strong chemical action developed by it, bring into active play the great dormant affinity of the oxygen for the metals in contact with it. It instantly attacks and burns any remaining portions of the metal pressure-gauge. It then with extreme rapidity burns back along the small copper tube which is generally used as a connection between the oxygen reservoir and the pressure-gauge, consuming the copper as it goes. In another instant it has attacked the metal, such as gun metal or Delta metal of its own main valve, and the steel of the reservoir tube into which the valve is screwed. The half melted valve is blown out bodily, like a shot out of a gun, by the imprisoned oxygen within, which then escapes, but not before it has fiercely attacked and ruined the steel of the reservoir itself.

"It will be seen that such a disastrous accident as this depends primarily upon the great affinity of the compressed oxygen for the lubricating hydrocarbon of the gauge. After this the almost instantaneous spread of the mischief depends upon the powerful affinity of the oxygen for metals. For I repeat that oxygen, under these great pressures, will attack anything, once a strong chemical reaction is started by such an initial explosion.

"All ordinary pressure-gauges, such as are in universal use for testing the pressure of steam in boilers, must be carefully avoided. A special gauge only, which has been taken to pieces by a skilled and thoroughly trustworthy mechanic, and carefully cleansed from every particle of the lubricating oil, by ether, or by some similar dissolvent to the oil, should be employed; no oil, or grease, or anything of the nature of a hydrocarbon, should be used in or in connection with it, as for lubricating the threads of the screw by which it is screwed on. It should be kept and applied in a perfectly dry and clean condition. . . . I do not assert that the use of any quantity of such a lubricant, say, on the screwed thread of a union joint, will necessarily, or even probably, determine an explosion. It is possible, I think, that in order to obtain the conditions necessary for such spontaneous combustion, we require to have the particles of the hydrocarbon driven round and round with the rushing oxygen in a state of very minute sub-division, as may naturally occur on the first rush of the oxygen under pressure into a lubricated gauge."

Those who have recently shown an interest in the explosion of Mr. Brandreth's valve will read the foregoing with much interest, and we are quite hopeful that it may assist the discussion upon the subject when the meeting is called upon Mr. Brandreth's return to England.

Yet another photographic exhibition, and this time at Leeds, and, which is rather curious, it is to be promoted by the Free Public Library Committee, and not by the

local society. On the 15th inst. the committee adopted a recommendation made by the Fine Art Gallery Committee to the effect that an exhibition of photographs should be held in the autumn on the lines suggested by Mr. W. H. Bothamley, Mr. Godfrey Bingley, and Mr. F. W. Branson, the two latter being members of the Leeds Photographic Society, and the former President of the Photographic Convention of the United Kingdom. The suggestion was made by these gentlemen in their private capacity, and not as officially representing either of the bodies to which they belong. We look forward with considerable interest to the details of the exhibition.

PHOTOGRAPHERS have devoted much attention to church architecture, and occasionally those connected with the Church have paid some attention to photography. On June 9th, 10th, and 11th there is to be a bazaar for the purpose of raising money in aid of the Building Fund of Christ Church, Sutton, and the Managing Committee have decided that there shall be a photographic competition and exhibition in connection therewith. Gold, silver, and bronze medals and certificates are to be awarded, and one of the conditions of entry is that the competitor shall, at the option of the Committee, contribute a mounted copy of his exhibit for sale at a photographic stall for the benefit of the Fund. There are to be eight classes: architecture, landscape, seascape and river scenery, portraits, subject pictures, instantaneous (subject must be such as to necessitate the use of a rapid shutter), transparencies, and lantern-slides. The work must be entirely that of the exhibitor, and no photograph will be eligible which has previously received a prize in open competition.

THAT enterprising and well got up magazine, *The Strand*, for May contains an interesting and humorous article on "A Day with an East End Photographer," which is profusely illustrated. Judging from the specimens of that gentleman's work given, he was above the average, and deserved all the success he attained by his Herculean exertions to secure customers, and then to please them.

It is, doubtless, perfectly true that the photographer is far more ubiquitous now than was the case a few years ago, and that he is called in on many occasions interesting to those concerned, but we much doubt whether the following extract from a contemporary gives quite a true idea of the state of affairs:—

"The photographer is now considered as necessary to the well-being of fashionable English society as the baker, the bootmaker, and the dressmaker. Many mothers have their children regularly photographed on each birthday. Babies are photographed in their little bare skins a few days after their birth, and a copy pasted in the family Bible—a valuable record of any birth-mark. A new gown is photographed—as a matter of course on the back of its wearer—and so is a new hat. The photographer is now sent for on all occasions of family rejoicing. He photographs the bride as she is tripping down the steps to the carriage preliminary to the honeymoon; he photographs the wedding breakfast at the moment when papa is wishing success to the happy pair; he photographs the *débutante* as she looked on departing for her first ball, or on her way to the Queen's Drawing-room; and he throws his camera on the sleeping form in the coffin, before it is consigned to the family vault."

WE have to chronicle the discovery of two new developing agents, one that of MM. Auguste and Louis Lumière, paramido-phenol, the other, of M. A. Noel, kinocyanine. We are unfortunately unable to do more than chronicle these discoveries, but next week we shall hope to give further details as to their chemical constitution and properties, and formulæ for the developers.



DR. E. VOGEL, the son of the famous professor, Dr. H. W. Vogel, has succeeded in preparing collodio-bromide of silver emulsion, which is equal in sensitiveness to the ordinary gelatine plate. Several English workers have also been trying for the same end, notably Dr. Hill Norris and Mr. J. B. B. Wellington.

WE noted some weeks back the perfecting of a collotype process for amateurs which could be used with the ordinary copying press. We expected to have been able to give full formulæ and working details this week. Pressure upon our space has compelled us to hold over the article, but we hope to include the same in an early issue. Collotype is by no means a difficult process, and the outlay according to the process we now speak of, perfected by M. Lavroff, the editor of our Russian contemporary, the *Amateur Photographer*, is not great, and many of our readers could do worse than try it.

OF celluloid and its uses in photography we have not yet heard the end. Herr Volkmer has described a process in which a gelatine relief image is obtained on a copper plate, and this relief is then pressed into soft celluloid, and the very finest details most religiously reproduced. The celluloid is then hardened, and a large number of impressions can be pulled from this, having all the beauty of the very finest photogravures.

WE would remind our readers that the 1890 Prize Lantern-slides, which are all in first-class condition for exhibition, may be booked for next season. Many dates have been taken, and it will be well to make early application.

The 1891 Prize Slides we shall hope to have ready for exhibition not later than the first or second week in October. The Secretaries of photographic societies who may wish to have the slides will do well to make their applications as early as possible, giving three optional dates. There will be the same number of slides, *i.e.*, 160, and the portraits of the sixteen prize winners. Carriage will have to be paid one way, and in every case a fee of *one shilling* booking fee must accompany the application. The 1891 "Prize Slides" will be reserved for photographic societies, but the "1890 Slides" are at the call of any of our readers on payment of carriage both ways and the booking fee of *one shilling*.

THE question of the definition of an amateur is again to the front, as is shown by our correspondence columns for the last week or two. Is it not about time that some authoritative body drew up and promulgated a definition which could be generally recognised? The question might be discussed at the Convention, where there will be representatives of both amateurs and professionals, or, possibly, failing that, the Photographic Society of Great Britain might take the matter up and thoroughly thrash it out, so that it should be laid to rest for ever. Or are these two bodies so very conservative that they will not care to tackle the question? New brooms proverbially sweep clean, so possibly the new-born Federation may do something in the matter; but any way, we should much like to know who will undertake to bell the cat?

#### HOME PORTRAITURE.

ARTIFICIAL light for portrait work may be classed into several divisions, such as electric light, magnesium ribbon, magnesium flash, oil lamps, and gas. Electric light we may dismiss at once, as few amongst us have an installation ready to hand. Magnesium ribbon requires more attention,

though this has to a great extent been replaced by the flashlight.

WE need not again enter into the question of posing, but merely give a few hints as to lighting. Our plan is to pose and focus the sitter, and place on one side of the sitter, which should be the shadow side, a lamp about one yard off and slightly to the front, just so as not to show on the focussing screen. We then use a pair of household steps, mount these, and have some helper to remove the cap of the lens at the moment we light twelve inches of magnesium ribbon, which is waved about. The steps are placed slightly to one side of the camera; the burning ribbon is moved about so as to equalise the illumination, and the two final inches are brought so as to illuminate the shadow side of face. The disadvantage of burning magnesium in the room is that the oxide or magnesia formed flies about and settles on everything, and if two or three exposures have to be made one after the other, the negatives obtained subsequent to the first are foggy and hazy. To obviate this, it is advisable to obtain one of Lancaster's magnesium lamps, and use this, which, after the ribbon has been burnt, merely requires opening in the open-air and the magnesia flies off. This also possesses a reflector, which throws the light on to the sitter more, and, therefore, actually less ribbon is required than when the ribbon is used alone. A large white reflector should be used with magnesium, the same as with ordinary daylight. There is one point which it is advisable to note, and that is that magnesium ribbon, and not wire, should be used, and, secondly, that magnesium ribbon which has been kept for some time is frequently oxidised on the surface. This should always be removed by drawing the ribbon once or twice through emery paper, or else between the nails. If much oxidised, the ribbon will splutter, and we have known it to be quite extinguished.

Our notes on the flashlight we must defer till next week, as, in consequence of the holidays, we have been unable to obtain a block which we desire to illustrate our notes with.

Few of our readers will believe in the use of an oil lamp, but there is one method which has given us fairly good results for profile and three-quarter-face portraits, and which may also be used for full face with a little ingenuity and contrivance. Still, this is only to be done by the possessors of an optical (or magic) lantern. The lamp is lighted and the circle of light directed on to the sitter, and so adjusted that no heavy black shadow appears on one side of the face, and also so that no black shadow appears on the background. An ordinary lamp should be used to light up the shadow side of the face, and in all artificial-light work the room should be as well lit up as possible so as to avoid great staring pupils to the eyes, and when this is not feasible without giving false lighting, the sitter should be made to look at a lighted lamp. The exposure required with such an arrangement is about twenty to thirty seconds, but if the limelight is to be had, ten seconds will be plenty.

An important point when working with artificial light is to use as rapid a plate as possible, and *it must be colour-sensitive*, or isochromatic or orthochromatic. Edwards' instantaneous isochromatic, or Obernetter's orthochromatic (Gotz, 19, Buckingham Street, Strand, agent) may be used; but for those who have a predilection for sensitising their own plates we should advise them to obtain some of Vogel's azaline tincture from Mr. Gotz, and use this. Eosin or erythrosin cannot be used without a licence from Messrs. B. J. Edwards and Co. Vogel's azaline solution, when used according to the directions, makes the plates more sensitive to ordinary white light than they would otherwise be, and the yellow sensitiveness is enormously increased, and plates thus prepared will keep for at least two months, and may be prepared in the evening and be ready for use next day.



## Letters to the Editor.

### THE EXPLOSION IN A GAS REGULATOR.

SIR,—I entirely withdraw the observations that I made about Mr. Brandreth with reference to the explosion of his oxygen regulator. Singularly enough, there is an article in the *Nineteenth Century* for May, by Col. Elsdale, R.E., which entirely solves the mystery of the explosion. He evidently writes from personal and not infrequent experience.

Col. Elsdale says that oxygen, although possessed of great affinity for metals, will not attack the metal of the steel bottles in its cold or normal state, but that it is extremely dangerous to expose oxygen under high pressure to any oil or any hydrocarbon whatsoever, as it has a still higher affinity for them. But pressure-gauges, as ordinarily constructed, are lubricated internally with such oils.

He goes on to say that he has known, more than once, the following accident to happen. The oxygen, rushing into the pressure-gauge, comes suddenly into contact with the lubricating oil; the affinity being so great, a violent explosion takes place. The heat and strong chemical action thus started bring into active play the great dormant affinity of oxygen for the metal in contact with it. It instantly attacks and burns any remaining portion of the pressure-gauge, and then, with extreme rapidity, burns back along the connecting metal tube. In another instant it has attacked the metal of the bottle valve, and the steel bottle into which it is screwed. The valve is blown out bodily like a hot from a gun, and by the time the gas has all escaped it has fiercely attacked and ruined the steel shell of the bottle itself.

I imagine that precisely the same remarks will hold good of the regulators that are in common use, and there can be little or no doubt that this was the cause of the explosion of Mr. Brandreth's regulator. The repeated turning on and off of the bottle valve was too much for the oxygen in contact with the small quantity of lubricating oil in the regulator; being provoked so frequently, it lost its temper, as it were, and produced the explosion, and I cannot but think that Mr. Brandreth and those about him had a providential escape from a most serious accident.

Col. Elsdale goes on to say that all pressure-gauges (and, by implication, regulators also) should be very carefully cleaned from every particle of lubricating oil, and that no oil or grease, or anything of the nature of a hydrocarbon, should be used in connection with them. Still, he concludes that it does not necessarily follow that the use of oil as a lubricator will cause an explosion; he is inclined to think that in order to obtain the conditions necessary for such a spontaneous combustion we require to have the particles of the hydrocarbon driven round and round with the rushing oxygen in a state of very minute subdivision.

Personally, I think that the danger will be reduced to a minimum if the valve of the bottles be turned on as slowly and carefully as possible at first. Still, the question arises in one's mind, Is it quite safe to have india-rubber, as the material forming the bellows, operated upon by the oxygen as it rushes into the regulator?

WERNER H. K. SOAMES.

\* \* \* \*

### WHAT IS AN AMATEUR?

SIR,—I quite agree with some letters in the *AMATEUR PHOTOGRAPHER* of May 8th. As Mr. James says, when anyone sends birds or poultry to an exhibition he does not hesitate to put a price on his exhibits. Why should not an amateur photographer be allowed to do so? It is all very well for some distinguished amateurs who have plenty of cash at their disposal, and can afford to give many pictures away, to say that an amateur must not sell any of his work or else he becomes a professional, but besides the trouble it becomes expensive to give away as many photographs as one's numerous friends would like.

I maintain that an amateur may make a charge for his pictures if anyone wants copies, and he does not try to sell them. Of course, to be an amateur he must not make a public exhibition of his pictures and so try to create a sale, but may try to defray the cost of his hobby.—I am, yours, etc.,

YXOL.

May 20th, 1891.

SIR,—In my opinion the term amateur is used in opposition to the term professional, and means one who uses photography as a

"hobby" and not as a means of "earning a living," and though the question of "earning money" has been more than once discussed, as differing from a "professional" only in degree, there has been no definite or binding decision on the subject.

The harmonious way in which both amateurs and professionals meet in many of our best societies shows that such a decision is unnecessary, and that the distinction is only made for exhibition purposes, and in my opinion it had better be done away with, and a broader basis be adopted, "that the exhibits in the first class be entirely the work of one person, and in the second class of more than one." This line of decision would admit of no misunderstanding, and no true amateur would object to compete against a professional under what must be equal terms, while the tendency would be towards higher and better class work all round.—Yours, etc.,

S. N.

May 20th, 1891.

### FEER'S PROCESS.

THE following is the translation of the German patent specification (No. 53455) of Dr. Adolf Feer's process for the production of coloured photographic prints, a question about which was given in our Quarterly Examinations, and which proved a stumbling-block to every competitor but one:—The present process is founded on the fact that, as the inventor has discovered, diazo-sulphonic salts ( $R-N \equiv N-SO_3Na$ ) react with phenol alkalis and hydrochloric or free aromatic amines, under the action of solar or electric light with the formation of the corresponding azo colouring matters. For the carrying out of this process, the inventor impregnates paper or cloth with a dilute molecular mixture of a diazo-sulphonic salt (e.g., aniline amido-azo-benzol) and phenol alkalis (e.g., phenol, resorcin, A and B naphthol) or hydrochlorate or free amines (aniline, naphthylamine, phenylendiamine). The paper or material is then dried in the dark, and then exposed under a negative for about five minutes to solar or electric light. By this means there is formed on the exposed places the insoluble azo dyes, whilst on the parts protected by the dark parts of the negative, the preparation remains in its original conditions of colourlessness and solubility. By this means the image is developed. After exposure, it is washed with water or dilute hydrochloric acid, by which means the unaltered preparation which remains unexposed under the negative is removed, and the image is fixed, and the impression, when dry, is finished. The following are some of the solutions with which the paper or material is treated:—

(1)	
Toluol-diazo-sulphonate of sodium ...	25 grammes.
B naphthol ...	25 "
Caustic soda ...	8 "
Water ...	1,000 "

(2)	
Ditoly-tetrazo-sulphonate of sodium ...	25 grammes.
M phenylendiamine ...	20 "
Water ...	1,000 "

(3)	
Ditoly-tetrazo-sulphonate of sodium ...	25 grammes.
Resorcin... ..	22 "
Caustic soda ...	16 "
Water ...	1,000 "

The following solutions will show the application of ditoly-tetrazo-sulphonate of sodium mixed with resorcin and A naphthol, or with A naphthol and phenylendiamine:—

(1)	
Ditoly-tetrazo-sulphonate of sodium ...	30 grammes.
Resorcin... ..	20 "
Solid caustic soda ...	15 "
Water ...	1,000 "

Powder the salts, and dissolve by the aid of a gentle heat.

(2)	
Ditoly-tetrazo-sulphonate of soda ...	30 grammes.
A naphthol ...	25 "
Caustic soda ...	7 "
Water ...	1,000 "

(3)	
Ditoly-tetrazo-sulphonate of sodium ...	30 grammes.
Phenylendiamine ...	20 "
Water ...	1,000 "

Solutions 1 and 2, or 2 and 3, can be mixed together in equal parts for the sensitising liquid. The paper is impregnated with the desired mixture, dried in the dark, then exposed under the negative for 10 or 15 minutes to direct sunlight. After exposure, it is washed with dilute hydrochloric acid, and finally with water.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER X.

WE come now to speak of the circular form of composition, which is applicable to the highest walks of art, from its



FIG. 21.—RAPHAEL.

simplicity and extensive sweep; and to the lowest, from its being finely adapted for the purposes of light and shade.

Fig. 21. In this cartoon we have a fine specimen of this form of composition. In the design a strict adherence to the plan laid down has secured a decided character to the picture. With Raphael this seems to have been invariably of the first importance; his worst compositions have always a strong feature to recommend them. In this design we have the figures gradually declining from the sides to the centre of the circle on the foreground, which enables the spectator to view the whole of the persons employed; to assist which arrangement, Raphael has placed the Apostles on an elevated plane; and by placing the principal in the centre, has enabled them to acquire that consequence their diminution would otherwise have deprived them of. The regularity of the composition is also increased by the division of the group into seven figures on each side, and no one, except Ananias and Sapphira, performs an action that is not repeated. Thus simply has Raphael contrived not only to tell his story, but also those circumstances which preceded and followed it. This regularity will strike the student as being particularly suited to religious subjects; but a few attempts, to make such uniformity appear a natural emanation, will compel him to exclaim with the poet,

"Within that circle none durst walk but he."

As I shall have occasion to speak of the repetition of form, as being no less essential towards the production of harmony than the repetition of colour, I may call the student's attention to it in this place. In compositions embracing many figures, a repetition of form and action is often found to be indispensable; a single figure, in such case, being found

too small to give importance to any action, is referred to the next for assistance; as, in colouring, one colour is often made to depend upon the adjoining for its shadow or enlargement. But, independently of its acquiring a consequence by such extension, harmony requires that a strong action should be as it were broken down and diffused through the group. In writing, this is generally the case, and the reader is prepared for one sentence by what has preceded it. This simplicity and harmonious communication is to be found in nature, in the antique, in the best Italian masters, and in

many of the Dutch, particularly Ostade.

In compositions of out-of-door scenes, this circular form of arrangement is often the only opportunity we have of procuring a mass of shade so necessary to the group in a pictorial point of view. I am aware that some sculptors consider the arrangement of their figures degraded by any attention to the picturesque effect of light and shade, which to painters seems more extraordinary, as sculptors have not the means of local colour to produce it. With sculpture, however, it is not our province to interfere.

The cartoon of the death of Ananias is one of the finest compositions of Raphael, and has been wisely selected by

Burnet as an example of an arrangement of lines and masses suitable to every class of art. The form selected to illustrate a Scripture miracle is also quite suitable for the most ordinary photographic group. We know well what this latter arrangement usually is. If the photographer has to undertake twenty or thirty figures, he places some standing in a row, some sitting in a row, and some



FIG. 22.—REMBRANDT.

lying in a row, with the soles of their boots to the camera and their figures foreshortened; moreover, the crowd is huddled and squeezed together, apparently for the purpose of making each figure look as large as possible, with, however, the contrary effect. In Raphael's design we have twenty-four figures, certainly not crowded, none of them looking small, and the space is well filled. It would require very little ingenuity to compose a modern group



on the same lines. There are many things worth considering in this cartoon; the variety of the masses, the opposition of the gestures, the play of line and flow of draperies, and the unforced prominence of the principal figures. Numerous and important figures are much nearer to the spectator than Peter, the cause of the action, yet he stands forth conspicuously. Besides his central position, Peter has alone the advantage of the free display of his full height; even the apostle who points to heaven, and seems almost as direct an agent of wrath as himself, is sufficiently subordinated by so simple a device as the interposition of the post and rail of the dais. The prominent effect is aided still further by the hand of the figure that stoops over the fallen man and at the same time points to the apostle; this action serving also to connect the two groups. The attitudes of the group of apostles on the dais afford a fine example of well-ordered variety.

Every design of Raphael's is worthy of the most attentive study of the student of composition. In these notes I prefer to give the opinions of others to my own, and quote the following from "Leslie's Handbook for Young Painters," which may contain a valuable hint to the student: "The lofty imagination of Raphael, the wonderful fertility of his invention, with all his extraordinary dramatic power and his deep knowledge of human nature, would never have made him what he is, had it not been for that indescribable natural urbanity, that true decorum which we can only associate with the purest taste, and which pervades every work of his hand, from his earliest attempts to the grandest of his frescoes. And the decorum of Raphael's mind is shown, not in his avoiding subjects which a less natural man might be afraid of, but in his treatment of every class of subject."

Fig. 22, by Rembrandt, is an example of the same kind of composition.



## The Construction and Use of Photographic Lenses.

BY CLEMENT J. LEAPER, F.C.S.,

*Instructor in Photography, City of Dublin Technical Schools.*

### CHAPTER V.

#### ON TESTING PHOTOGRAPHIC LENSES.

To test anything means to compare it with something else taken as type, and this being the case it would obviously be as absurd to pronounce an opinion upon a lens by the mere inspection of the work done by it, as it would be to estimate the correctness of a yard measure by looking at a length of calico measured by means of it.

The following are the chief factors which should be determined for every lens in actual use:—

1. Its focal length and the position of the nodal points of admission and emission.
2. The extent, depth, and degree of illumination of its field of definition.
3. The amount of spherical aberration it possesses.
4. The presence or absence of distortion and of chromatic aberration.

All these measurements can be effected on the following simple form of optical bench:—

A B C D is a 4-foot board of inch, well-seasoned pine, planed up true and with the edges A B C D exactly parallel to each other (fig. 24). Along A B and C D are screwed

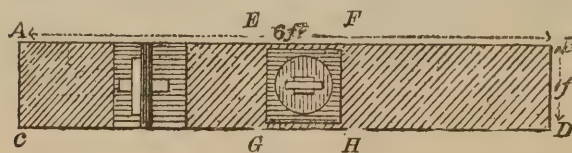


FIG. 24.

two guides, projecting an inch above the surface, and one of these is graduated in inches, tenths, and hundredths.

Along this board slides, between the guides, the focussing board, E F G H.

This latter, shown in elevation in fig. 25, consists of a 12-inch support carrying an upright at right angles to it, pierced with a rectangular aperture, 3 by 1 inch. Another board slides up and down between guides over this, and carries the focussing magnifier, consisting of the Ramsden eye-piece of a small telescope. A nut and bolt serve to secure the magnifier in any position. The magnifier is screwed into a brass plate, itself attached to the sliding board pierced with a round hole.

Another focussing board, shown in fig. 26, is also provided. This consists of an upright board, A D, 18 inches long and 12 inches high, attached at right angles to a piece B C, itself capable of moving to and fro over the top

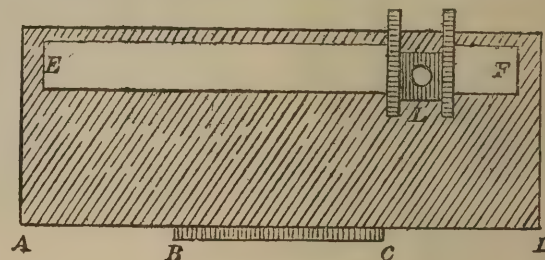


FIG. 26.

of the bench. This board is pierced with a rectangular aperture E F, 5 by 16 inches, and in this slides a square piece of wood of the same width as the aperture. Behind this are two guides (not shown in the figure) to prevent it from falling out, and in front of it are two uprights shown, between which the board carrying the magnifier slides up and down. The square piece fitting into E F being pierced with an aperture 4 inches square, it will be understood that the magnifier can be moved to and fro along E F or up and down.

The lens board consists of an 11-inch square of pine, having a 10-inch circle of the same wood revolving over it (fig. 27). This latter is graduated in degrees, and a wire projecting over the graduations and with its lower end fixed to the square board, serves to show the angle through which the circular board has been rotated. Over the graduated circle a piece of  $\frac{1}{4}$ -inch pine, A C, slides between two guides.

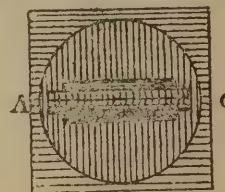


FIG. 27.

To make the lens support, a piece of  $\frac{1}{8}$  sheet brass, 5 by 3 inches in size, is cut as shown in fig. 28, A being 1 by  $\frac{1}{4}$  inch, B and C  $\frac{1}{2}$  by  $\frac{1}{4}$  inch. This is then bent so as to form part of a cylinder, whose axis lies along A D, and the pieces B C having been turned down, a

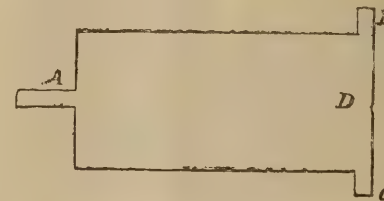


FIG. 28.

2-inch brass pin is soldered to the centre of each of them. A is first turned down at right angles to A D, and half is then bent up so as to be parallel to A D. At the extremity of this portion is soldered the brass thread of a levelling screw 3 inches long.

In the cylinder the lens rests, and the levelling screw



attached to A used in conjunction with the pins B C serve to centre it. The whole arrangement rests upon the board A C in fig. 27.

It will be readily understood from the description that a lens resting in the cylinder, itself on the board over the graduated circle, can be adjusted so that its axis is parallel to the surface of the board, and can then be moved to and fro, so that any point along its axis can be brought over the centre of rotation.

The lens being in position over the movable circle and the square board carrying the latter being placed on A B C D (fig. 24), it is clear that the levelling screw provides a means of rendering the axis of the lens parallel to the surface of the board, whilst the fact that the lens board is narrower than B D enables the axis to be rendered parallel to the edge of the board or to the axis of the magnifier, whilst the up and down motion of the latter enables the axis of both magnifier and lens to be brought into the same straight line.

Another board, 12 feet long, is also provided, carrying, like the optical bench, an upright capable of moving to and fro between guide pieces screwed to the side of the 4-foot board. This upright itself carries a slit of brass capable of up and down motion, and the distance between whose jaws can be altered at will.

At the other end of the 4-foot board is pivoted a square piece capable of sliding along the optical bench proper. It will be understood from the description that this board can be placed at any point on the optical bench and then tilted so as to make any angle with the latter. To show through what angle it has been moved, the end rotating over the bench is cut to a semicircle and graduated into degrees.

(To be continued.)

## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 314.)

CHLORINE in the free state is usually prepared, directly or indirectly, from hydrochloric acid. The hydrogen is oxidised to water, whilst the chlorine is liberated. This action takes place to a limited extent when a mixture of hydrogen chloride and oxygen is passed through a red hot tube, thus,  $2\text{HCl} + \text{O} = \text{Cl}_2 + \text{H}_2\text{O}$ . It is, however, most easily brought about by the action of certain oxidising substances, such as manganese dioxide  $\text{MnO}_2$ , lead dioxide  $\text{PbO}_2$  and potassium dichromate  $\text{K}_2\text{Cr}_2\text{O}_7$ . Hydrogen peroxide and all other peroxides yield water and chlorine by interaction with hydrochloric acid.

EXPERIMENT 130.—In a large test tube heat some manganese dioxide gently with strong hydrochloric acid; observe that a yellowish green gas is given off, which has a powerful and disagreeable odour and bleaches a piece of litmus paper.  $\text{MnO}_2 + 4\text{HCl} = \text{Cl}_2 + 2\text{H}_2\text{O} + \text{MnCl}_2$ .

EXPERIMENT 131.—Perform a similar experiment with red lead ( $\text{Pb}_3\text{O}_4$ ); no heat is necessary in this case.  $\text{Pb}_3\text{O}_4 + 8\text{HCl} = \text{Cl}_2 + 4\text{H}_2\text{O} + 3\text{PbCl}_2$ .

EXPERIMENT 132.—Perform a similar experiment with potassium dichromate  $\text{K}_2\text{Cr}_2\text{O}_7 + 14\text{HCl} = 3\text{Cl}_2 + 7\text{H}_2\text{O} + \text{Cr}_2\text{Cl}_6 + 2\text{KCl}$ .

Observe that in all these cases part of the chlorine remains in combination with the metallic constituent of the oxidising agent.

EXPERIMENT 133.—In order to prepare a larger quantity of chlorine grind together 30 grammes common salt and 30 grammes manganese dioxide, put the mixture into a flask similar to that used for the manufacture of hydrogen chloride, pour down the funnel tube a mixture of 35 c.c. of strong

sulphuric acid with 35 c.c. of water (previously allowed to cool), and agitate gently until the whole of the solid mixture is thoroughly wetted by the acid. Chlorine will begin to come off steadily at the ordinary temperature, and the evolution is assisted by a gentle heat, but becomes too rapid if the mixture is allowed to get too hot. Collect the gas in four dry bottles by displacement as in the case of hydrogen chloride,  $2\text{NaCl} + \text{MnO}_2 + 2\text{H}_2\text{SO}_4 = \text{Cl}_2 + 2\text{H}_2\text{O} + \text{Na}_2\text{SO}_4 + \text{MnSO}_4$ .

N.B.—The preparation and collection of chlorine and the experiments with it *must only* be done in a proper draught chamber or in the open air. Even when present in the air in only small quantities, chlorine is very irritating and injurious to the lungs, etc. If any of the gas should be accidentally inhaled, the best remedy is to pour alcohol on the hand or on a cloth and inhale the vapour.

The greenish-yellow colour of the gas will be seen better in the bottles than in the tubes used in previous experiments, and in fact, it serves as an indication that the bottles are completely filled.

EXPERIMENT 134.—Into one of the bottles introduce some imitation gold leaf (Dutch metal) on the end of a glass rod. Combination will take place between the chlorine and the metal, with development of heat and perhaps light also.

Chlorine combines spontaneously with many metals at the ordinary temperature, forming chlorides, and it combines with others upon heating.

EXPERIMENT 135.—Into another bottle put a piece of filter paper or tissue paper moistened with turpentine; there will be a flash of flame, and an evolution of black smoke and white acid vapours. The smoke is carbon, the acid vapours are hydrogen chloride, and the change which takes place is represented by the equation.  $\text{C}_{10}\text{H}_{16} + 8\text{Cl}_2 = \text{C}_{10} + 16\text{HCl}$ , turpentine being a hydro-carbon (*i.e.* compound of hydrogen and carbon) of the composition  $\text{C}_{10}\text{H}_{16}$ . Chlorine has a great tendency to combine with hydrogen, but very little tendency to combine with carbon.

EXPERIMENT 136.—By gas-light or in weak daylight fill two long test tubes exactly half full of hydrogen, and then pass in chlorine until they are quite full, using a small pneumatic trough and a saturated solution of common salt in place of water. Put one of the tubes with its contents, still standing over strong salt solution, in the dark, and observe that no change takes place even after a long time. Put the other tube in diffused daylight (*not sunlight*), and observe that the colour of the chlorine rapidly disappears, whilst the salt solution rises in the tube. Under the influence of light the hydrogen and chlorine unite to form hydrogen chloride, and the latter is dissolved by the salt solution.

EXPERIMENT 137.—The great tendency of chlorine to combine with hydrogen makes it a powerful bleaching agent. Into one of the bottles of gas pour strong sulphuric acid to a depth of 2 c.m., replace the cover and incline the bottle so that the sides become moistened with the acid, a large surface of the latter being exposed to the action of the gas. The sulphuric acid has a very great attraction for water and dries the chlorine by absorbing water vapour. After the chlorine has been in contact with the acid for an hour or so, introduce into the bottle a strip of turkey-red cloth, or other coloured cloth, previously well dried. Take care that the cloth does not dip into the acid. Observe that the colouring matter is not bleached.

Repeat the experiment, using a bottle of chlorine that has not been treated with sulphuric acid, and a piece of the same cloth that has been wetted with water, the excess of water being squeezed out. Under these conditions *i.e.*, in presence of moisture, the colouring matter will rapidly bleach. Chlorine has a great attraction for hydrogen, and most colouring



matters have some attraction for oxygen; the simultaneous action of chlorine and the colouring matter on the water decomposes it, the hydrogen combining with the chlorine to form hydrogen chloride, whilst the oxygen combines with the colouring matter to form a colourless substance, thus,  $\text{Cl}_2 + \text{H}_2\text{O} + \text{dye} = 2\text{HCl} + \text{oxidised dye}$ . In absence of water, this action of course cannot take place.

The presence of moisture, even in small quantity, not only affects the bleaching action of chlorine, but also its combination with hydrogen and its behaviour towards many other substances.

It is evident that bleaching is a process of indirect oxidation, and this indirect oxidising power of chlorine is very often utilised for obtaining the higher oxides, and the more highly oxidised salts of metals.

EXPERIMENT 138.—To a dilute solution of lead nitrate, add sodium hydroxide solution until the mixture is slightly alkaline; a white precipitate will form. Into the liquid containing the precipitate pass chlorine gas; the white compound will change to dark brown, owing to its conversion into lead peroxide, thus,  $\text{Pb}(\text{OH})_2 + \text{Cl}_2 + \text{H}_2\text{O} = \text{PbO}(\text{OH})_2 + 2\text{HCl}$ .

EXPERIMENT 139.—Perform a similar experiment with a solution of a manganese salt; the manganous hydroxide will change to hydrated manganese peroxide.

Note that the action of chlorine in presence of water in these cases resembles the action of hydrogen peroxide in previous experiments.

Chlorine is readily dissolved by water, which takes up nearly two and a half times its own volume of the gas at the ordinary temperature. The solution is called *chlorine water*; it has the colour, smell, and many other properties of the gas.

EXPERIMENT 140.—Make chlorine water by allowing the gas to bubble through water until the latter acquires a decided greenish-yellow colour. Observe its smell and ascertain whether it will bleach, dissolve imitation (or real) gold leaf, and produce the same results as the gas in Experiments 138 and 139.

EXPERIMENT 141.—Expose some chlorine water to sunlight, observe that after a time the solution becomes colourless, but retains its power of bleaching. After longer exposure, however, the bleaching power also disappears. The exact nature of the change depends on the intensity of the light; in extremely bright light the decomposition is represented by the equation  $\text{Cl}_2 + \text{H}_2\text{O} = 2\text{HCl} + \text{O}$ , but under ordinary conditions it is more accurately represented by the equation  $4\text{H}_2\text{O} + 4\text{Cl}_2 = 4\text{HCl} + 4\text{HClO}$ . The last compound is *hypochlorous acid*: upon prolonged exposure it decomposes into hydrochloric acid, *chloric acid* and oxygen, thus,  $4\text{HClO} = 3\text{HCl} + \text{HClO}_3 + \text{O}$ . It follows that the final result of the prolonged exposure of chlorine water to light under ordinary conditions is represented by the equation  $4\text{H}_2\text{O} + 4\text{Cl}_2 = 7\text{HCl} + \text{HClO}_3 + \text{O}$ .

## Thursday Evenings at the Camera Club.

THURSDAY, the 14th inst., was a lantern evening at the Camera Club, and slides were shown by Messrs. D'Arcis, Pinkney, Fitz-Payne, Phipps Lucas, Chang, Charters White, Humphery, and other members.

The subject on Thursday, May 28th, will be a short paper communicated by M. Leon Vidal, on "A Process of Mechanical Colouring for Carbon Transparencies, Stereoscopic Views, and Lantern Slides."

At this or the subsequent meeting a paper by Professor W. K. Burton, on "A Modified Silver Printing Process," will be read and examples shown.

## Amateur Albums.

By "NESTOR."

How many of us, I wonder, can contemplate this title with tranquility or satisfaction? Alas, I fear, but few. "Amateur albums"—do we not all shudder still at the remembrance of some of them? And are they not to most of us words that recall with painful distinctness the circumstances attending many a miserable failure? The picturesque spot, with its delicate lights and shades, whose photographic image we had fondly hoped would be the gem or at all events the redeeming feature of the collection; the excitement attending exposure, the anxiety during development—waiting for the thing to come out—the joy at getting something—at last; the horror of finding that that confounded bush in the foreground had, after all, come in all down the left side well out of focus, while the top of our walking-stick had furtively crept in at the right-hand bottom corner—do not these words bring all this back to us with horrid vividness? And is not the worst of it all that a something just marring the picture, a something just preventing us from reaching our ideal, is ever occurring in some form or another as regularly as the light of day? I say "ideal," because I believe, nay, am certain, that the motive which first prompts us to invest in our kit is, with most of us, praiseworthy. Captivated by some perfect picture, either a finished portrait or a well-treated landscape, and believing, in the innocence of our hearts, that we have but to touch a trigger, pour something on a plate, and transfer to paper, in order to obtain similar results, we have no rest until, fully equipped, we may advance on the war-path; and then, by George! we go at it *con amore*. Nothing stops us, nothing escapes us. Regardless of time, place, or circumstance, utterly unmindful of other people's feelings, forgetful alike of manners and decorum, we shoot at anybody and everybody, at anything and everything. And further, we rigorously carry out the stereotyped programme—we touch our triggers, we pour on our "something," we transfer to paper, and we get—nothing; or at all events, nothing approaching the ideal which first tempted us to take to the trade. Undaunted, however, we attribute our failure to want of experience in manipulation. So we continue to work away, but still without obtaining the desired result. Becoming desperate, we now turn to a different make of plates and to new developers, possibly also to a new style of printing. And now, having done a lot of work, we start our album, in which, to say the truth, there is no lack of photographs. Every conceivable subject is to be found in it. Portraits—oh, horror!—groups, landscapes, seascapes jostle each other in profusion. Developed by every known agent, from "pyro" and ammonia to eikonogen and soda, they have been printed in every sort of style from ordinary silver to platinotype. And yet, in that album, though ample proof be shown of our zeal and energy, though our knowledge of the various processes employed be apparently complete, there is not probably a single specimen that can, by any possible stretch of imagination, be called a picture.

Now this is rather a melancholy state of things, yet a state which, so far as my experience goes, is very general. Who is to blame? Why should the student of our art, after having done so much work and spent so much time and money in acquiring technical skill, so constantly fail to produce anything of real merit? One reply to the question would be that he has been misled and deceived from the start. He supposed that his camera, plates, chemicals, and paper would make him a picture. He did not know that a knowledge altogether outside exposure, development, and printing is required for such a purpose. Nor had he at all realised the fact that whenever a photograph awakens in us a sense of pleasure akin to what we experience when viewing a good picture at one of the galleries, it might be taken for granted that this further knowledge had, either by accident or design, been made use of in its production.

That some acquaintance with the rules of art is here alluded to, some of your readers will have gleaned, but they are not exactly the rules of art as practised by the artist. We are not, for instance, troubled much with perspective, nor either with the value and balance of colour. We cannot, if we would, heighten or shorten a tree, change the pitch of a roof or the breadth of a tower to obtain more agreeable lines; nor can we, at least not easily, bodily move a clump of trees into our picture, which does not exist within the angle embraced by our lens. But we can do a lot of other things. Instead of snapping away at anything and everything, we can choose, if we know how to, that position



which is nearest in accordance with art rules, and we might wait for that hour best suited to give the breadth of light and shade so necessary to pictorial effect. Moreover, if we cannot put in anything which does not exist, there is often no difficulty in leaving out something that does. How often does it not happen that by vignetting out the surroundings—the foliage out of focus and the top of our walking-stick, for instance—we get a nearly perfect picture, only wanting the introduction of a few shadows and the insertion of some foreground high-lights, the separation of sky from horizon, or of one distant hill from another, to make it absolutely so. And all this can be done, as every skilled photographer knows, and as nearly every extant work on photography tells us—if we would only take the trouble to read them—by a little tissue paper, a few paints, some self-made paper masks, a pencil or two, some cotton-wool, and a little knowledge how to use them, such as is rapidly gained by a few experiments. Yet if this be so, why, in the name of fortune, is it not done? Why continue to commit the fatal error of perpetually changing plates, chemicals, and paper? Why keep on dodging from one thing to another? “Why,” in fact, “soft music,” when such cheap, simple, and efficacious means of remedying every defect are close at hand, only waiting to be made use of? Ignorance, as I have said, is in very many cases the *vera causa*; laziness, perhaps, in some others, to which may be added an insatiate thirst for something new, coupled with that peculiar reluctance to finish thoroughly the work in hand—a common fault in our time of amateur artists of every kind. And yet if the enormous amount of amusement and instruction that is to be got by what may be called “doctoring” a bad negative could but be once realized by the young amateur, and the excellent results which attend the cure be once experienced, it is certain that his photographic life would be a happier one, and the “album,” instead of being a terror to friends and a gloomy record of mis-spent time and wasted money, would be to one and all a never-failing source of pleasure, and a sure means of enhancing the owner's reputation as a photographer.

## Reviews.

*Die Chemischen Wirkungen des Lichtes, Photochemie, Spectral-photographie, die Photographie im Zusammenhang mit Klimatischen Verhältnissen und die Actinometrie.* Published by Wilhelm Knapp, Halle a. S. Price 5s.

This work forms the second part of the first volume of the new edition of Eder's “Handbuch,” and, as its title implies, treats of the chemical action of light, or photo-chemistry, spectro-photography, photography in connection with meteorology, and actinometry. Reviewing this new work of Eder's within reasonable limits is like trying to condense the information given in one volume of our paper into half a column, a task beyond the powers of any man. The information given is of the most complete and exhaustive kind, and above all things recent. The chapter devoted to photo-chemistry treats of the molecular changes produced by light, the combinations and decompositions produced by the same agent, the connection between light and heat, Moser's images, pressure images, the connection between light and electricity, the action of electricity on the sensitive films, etc. In Spectrum Photography we have a summary of the results obtained in this direction, and the action of the various parts of the spectrum. Photography and Meteorology gives us tables of the relative actinic value of the light nearly all over the globe. The section devoted to Photometry is of the most complete and exhaustive kind, and the summary of the commercial kinds of photometers and actinometers or exposure meters is extremely useful. Messrs. Hurter and Driffield's researches are recorded side by side with the very latest opinions, both English and Continental.

Dr. Eder is not content with merely recording the statement of any writer, but gives chapter and verse, and in many cases has added notes of his own, which are by no means the least valuable part of what we may justly call an “epoch making” work on photography, and a work which will stand as a monument to the untiring energy and devotion of the writer to this subject. It is at once the most scientific, the most complete and exhaustive work ever yet published in this department, and will doubtless form a groundwork for many a future work by less renowned writers.

## The Picture Galleries.

### THE NINETEENTH CENTURY ART SOCIETY.

THE twenty-fourth exhibition of members' work opened on Monday, 11th, at the Society's Galleries in Conduit Street, some five hundred works being hung. It is from the contemplation of such a collection as the above that the average student of picture making by photography can learn more than he is able to from larger and more academic displays.

The Nineteenth Century Art Society is composed mainly of young and rising artists, those whose celebrity is all in the future. From the inspection of their works we may see not only the strength and the weakness of painting, but what is more to the point, we can recognise the shortcomings and also the potentialities of photography. Why not equally so, the reader may ask, in such shows as the Royal Academy?

The answer is that, apart from the bewildering number of the canvases which demand attention and confuse the critical faculties, the higher class of artists, as a rule, exhibit in their works to a very large degree the old maxim, *ars est celare artem*, and therefore the humble photographer may admire much and yet learn little.

On entering the gallery, a moonlight entitled “Harvest Eve,” by Maurice Page, is the first to catch our eye. When will photography be able to accomplish the depiction of a real moonlight scene; not a moonshine one taken by sunlight? Mr. Page shows a still better picture entitled “A Gleam in Winter—on the Thame.” The scene so tenderly touched in is one that would admirably lend itself to photographic treatment. This, by the way, reminds us that the amateur will find it worth his while to visit not only this particular but other art exhibitions, in order to obtain hints as to promising localities to work upon. Artists having, not only a trained eye, but plenty of opportunity, often unearth scenes of merit which the diligent amateur “wots not of.” We especially noted down a little bit at Steyning, Sussex, by Powell May, as a spot to be visited with the camera. “Kynance Cove,” by Oxley Nash, is also noteworthy, but the view, like Shanklin Chine, Dovedale, etc., has been painted and photographed *ad nauseam*. “Village Green,” by H. Hague, might be (but isn't) a coloured photograph. It shows us what most prints lack, *i.e.*, a sense of order and arrangement, and an insistence of a dominant interest. Norman Davies is represented by “The Wave,” which shows us a “maiden mit nodings on” stooping as a breaker curls over her; a few photographic studies would have improved the water. Sweetly captivating is the “New England Maiden” by the same gentleman, although it is a thought too smooth and clean in colour. The “Harbour Mouth,” by F. Maitland, is distinctly good, and still more breezy and fresh is his “Morte Race.” In “Breakers,” by Hamilton Marr, we see rocks which no one who has consulted photographic prints of the sea shore would dream of perpetrating. Compare this composition with 171, by Croxford, which, with Brett-like fidelity to the stratigraphical features of the coast, fairly challenges comparison with a photograph. Another work of which the same might be said, is “Bosham Harbour,” by Yeend King. “The League Long Roller,” by Parsons, is suggestive of Mr. Dresser's Jersey sea studies. “Will you Allow us to Pass” is a fine subject evidently spoilt by hurry and by a lack of perspective knowledge. The painter, Mr. H. G. Shaw, possesses such an undoubted genius for animal painting that we counsel him to employ the “magic of patience” when painting in backgrounds. “In a Warm Corner” is one of several clever still-life studies by J. Fitz-Marshall, apropos of which, why do amateurs give us so few photographic still-life studies?

Our catalogue is marked with notes of a number of pictures and studies, the authors of which would have escaped from being convicted of glaring inaccuracies of drawing had they made a free use of our art-science. But it would be hardly a pleasant task to pillory those who at present are only “learning to walk.” Suffice it to say that the painters of animals and figures are the chief offenders, and trees, rocks, and skies are objects which artists seem to have some difficulty in accurately delineating.

**Correction.**—A correspondent writes:—“Will you allow me to correct a slight mistake in your issue for last week? On page 349, in your notice of M. Vidal's lecture, you say, ‘Specimens were contributed by . . . Haufstangel, Munich.’ This gentleman's name is *Haufstangel*.”



## "Amateur Photographer" Dark-Rooms, 1891.

THE "DARK-ROOMS" kindly placed at our service for the use of amateur photographers are classed as follows:—

*a* Amateur *d* Dealer or professional.  
*h* Hotel *s* Photographic society.

Letters of Introduction, Three Penny Stamps.

<i>a, d</i> Aberdeen	<i>h</i> Dartmouth	<i>d</i> Lechlade	<i>d</i> Romford
<i>d</i> Aberystwith	<i>d</i> Deal*	<i>h</i> Ledbury	<i>d</i> Royston
<i>d</i> Addingham, Yorks*	<i>d</i> Derby	<i>a, d</i> Leeds	<i>d, h</i> Ryde, Isle of Wight
<i>d</i> Amsterdam	<i>a</i> Devizes*	<i>a, d</i> Leicester	
<i>d</i> Andover, Hants*	<i>h</i> Dingwall, N.B.	<i>d</i> Leek, Staffs	<i>a</i> St. Agnes
<i>d</i> Aylesbury, Bucks	<i>a</i> Doncaster	<i>a</i> Lenzie, N.B.	<i>d</i> St. Andrews, N.B.
	<i>a, d, h</i> Douglas, Isle of Man	<i>d</i> Leytonstone, Essex	<i>h</i> St. Asaph
<i>d</i> Banff, N.B.	<i>d</i> Dover	<i>d</i> Lincoln	<i>d</i> St. Bees
<i>d</i> Barmouth, N. Wales	<i>d</i> Dresden, Germany	<i>d, s</i> Liverpool	<i>a</i> St. Helens*
<i>a</i> Barnsley*	<i>d, h</i> Dublin	<i>h</i> Lizard, Mullion	<i>d</i> St. Heliers
<i>d</i> Barnstaple	<i>h</i> Dunblane, N.B.	<i>d</i> Llandudno*	<i>a</i> St. Ives, Hunts*
<i>d, s</i> Bath	<i>a, s</i> Dundee	<i>d</i> Llanidloes*	<i>d</i> St. Leonards*
<i>h</i> Beaconsfield	<i>a</i> Dungarvan, co. Waterford	<i>d</i> London, Aldersgate, E.C.	<i>h</i> St. Mellons
<i>a</i> Bedford	<i>a</i> Duns*	<i>a</i> Borough, S.E.*	<i>h</i> St. Neots
<i>d, s</i> Belfast	<i>d</i> Durham*	<i>d</i> Charterhouse Sq., E.C.	<i>d</i> Sandgate, near Folkestone
<i>d</i> Belper		<i>a</i> Chelsea, S.W.	<i>d</i> Sandown, Isle of Wight
<i>d</i> Bexhill-on-Sea*	<i>d</i> East Molesey, Surrey	<i>d</i> Fenchurch Street, E.C.*	<i>a, d</i> Scarborough
<i>d</i> Birchington-on-Sea*	<i>h</i> Ebbw Vale	<i>d</i> Fleet Street, E.C.*	<i>h</i> Seddlescomb, near Battle
<i>a, d, s</i> Birmingham	<i>d</i> Edinburgh	<i>d</i> Gracechurch Street, E.C.	<i>a</i> Shaftesbury
<i>d</i> Blackburn, Lancs*	<i>s</i> Egremont	<i>d</i> London Bridge, S.E.*	<i>d</i> Shanklin, Isle of Wight
<i>h</i> Blakney, nr. Severn Bridge	<i>h</i> Ennistymon, co. Clare	<i>d</i> New Cross, S.E.*	<i>d, s</i> Sheffield
<i>h</i> Bodiam	<i>a</i> Enfield Town*	<i>d</i> Peckham, S.E.	<i>h</i> Shepton Mallet
<i>d</i> Bodmin	<i>d</i> Eton	<i>d</i> Walworth Road, S.E.*	<i>d</i> Shrewsbury
<i>d</i> Bolton*	<i>a, d</i> Evesham	<i>a</i> Long Eaton	<i>h</i> Sleaford
<i>h</i> Bonar Bridge	<i>d</i> Exeter	<i>d</i> Long Melford	<i>d, h</i> Southampton
<i>h</i> Boro' Bridge, Yorks		<i>d</i> Loughborough*	<i>h</i> Southend-on-Sea
<i>d</i> Bournemouth	<i>s</i> Falkirk	<i>a, d</i> Louth	<i>a</i> Southport
<i>d</i> Bournemouth, West	<i>d</i> Falmouth*	<i>a</i> Ludlow	<i>a, s</i> Southsea
<i>d</i> Bradford	<i>d</i> Faversham	<i>d, h</i> Lynmouth*	<i>a</i> Stamford
<i>d</i> Bramley, near Leeds	<i>d</i> Felixstowe*	<i>d</i> Lynn*	<i>a</i> Steyning
<i>d, h</i> Brechin, N.B.*	<i>d</i> Finchley	<i>a</i> Lythe, Whitby	<i>d</i> Stockton-on-Tees
<i>h</i> Bridge, near Canterbury	<i>h</i> Fochabers, N.B.		<i>a</i> Stoke-on-Trent
<i>d</i> Bridlington Quay	<i>d</i> Folkestone	<i>h</i> Macroom, N.B., co. Cork	<i>a</i> Stony Stratford*
<i>h</i> Brigg, Yorks	<i>a</i> Four Ashes, nr. Stourbridge*	<i>a</i> Madeley, Salop	<i>a, d</i> Stourbridge
<i>d</i> Brighton, Hove	<i>a</i> Frodsham	<i>d</i> Maidenhead	<i>d, h</i> Stratford-on-Avon
<i>d, h</i> Brighton		<i>a</i> Mainz, Germany*	<i>d</i> Stroud
<i>d</i> Bristol	<i>a</i> Galashiels, N.B.	<i>d</i> Manchester*	<i>h</i> Sudbury, Suffolk
<i>h</i> Broadway, Worcester	<i>a</i> Genoa	<i>h</i> Mallow, co. Cork	<i>d</i> Sunderland
<i>d</i> Bromley, Kent	<i>h</i> Giant's Causeway, Ireland	<i>a</i> Malta*	<i>h</i> Sutton Bridge
<i>h</i> Brough, Westmoreland	<i>d, s</i> Glasgow	<i>d</i> Malvern*	<i>h</i> Sutton
<i>d</i> Burnley*	<i>a</i> Glenalmond, N.B. (nr. Perth)	<i>d</i> Mansfield*	<i>d</i> Swindon
<i>s</i> Burslem	<i>h</i> Glenarm, Belfast	<i>d</i> Margate	
	<i>d</i> Gloucester	<i>h</i> Merthyr Tydfil	<i>d</i> Taunton
<i>a</i> Cadiz, Spain*	<i>d</i> Gorleston	<i>d</i> Merton	<i>a</i> Tavistock*
<i>h</i> Callander, N.B.	<i>a</i> Goring-on-Thames	<i>d</i> Middlesbrough	<i>a</i> Thornton Dale, nr. Pickering
<i>h</i> Camborne	<i>a</i> Gravesend	<i>h</i> Monmouth	<i>h</i> Thorpe
<i>d, h</i> Cambridge	<i>d</i> Great Yarmouth*	<i>d</i> Montrose, N.B.	<i>h</i> Tintern Abbey
<i>d</i> Carnarvon*		<i>a</i> Mountsorrel	<i>d</i> Todmorden
<i>h</i> Capel-Curig, N. Wales	<i>a</i> Halifax	<i>a</i> Mumbles, near Swansea	<i>d</i> Torquay
<i>a</i> Chalfont St. Peter, Mid.	<i>d</i> Handsworth*		<i>h</i> Tring
<i>d</i> Cheltenham	<i>d</i> Hanley	<i>d</i> Newark, Notts	<i>d</i> Tunbridge Wells
<i>d</i> Chepstow	<i>d</i> Harrogate	<i>d</i> Newcastle-on-Tyne	<i>a</i> Tynemouth
<i>d</i> Chester	<i>d, h</i> Hastings	<i>d</i> Newport, Mon.	
<i>a</i> Chesterfield	<i>s</i> Havant	<i>a</i> Newport, Pembroke	<i>s</i> Uttoxeter
<i>a</i> Chipping Sodbury	<i>d</i> Hereford	<i>a</i> Niton, Isle of Wight	
<i>a</i> Cinderford	<i>d</i> Hexham	<i>d</i> Norwich	<i>a</i> Ventnor*
<i>d, h</i> Cirencester	<i>h</i> Holbeach	<i>d</i> Nottingham	<i>a</i> Vienna*
<i>d</i> Clacton-on-Sea	<i>a, d</i> Hull	<i>a</i> Northallerton*	
<i>s</i> Cleckheaton			<i>h</i> Wadebridge
<i>d</i> Clevedon*	<i>d, h</i> Ilfracombe	<i>s</i> Oldham	<i>d</i> Wakefield
<i>d</i> Clifton	<i>d, s</i> Ipswich	<i>a, d</i> Oxford	<i>h</i> Warwick
<i>a</i> Clitheroe			<i>h</i> Waterford
<i>d</i> Colchester	<i>d</i> Jarrow	<i>h</i> Paignton*	<i>d</i> Wath-on-Dearne
<i>h</i> Colnbrook	<i>d</i> Jersey	<i>h</i> Paisley, N.B.	<i>a</i> Wellington, Salop
<i>d</i> Colwyn Bay*		<i>d</i> Penrith	<i>d, s</i> West Hartlepool
<i>h</i> Congleton	<i>d, s</i> Keighley	<i>d</i> Penzance	<i>d</i> Weston-super-Mare
<i>a</i> Coniston	<i>s</i> Kendal	<i>d</i> Pershore	<i>h</i> Wetwang, York
<i>d, s</i> Crewe*	<i>a</i> Kingstown, Dublin	<i>a</i> Perth*	<i>d</i> Weymouth
<i>d</i> Crewkerne*	<i>a</i> Knutsford	<i>a</i> Poole*	<i>d</i> Whitby
<i>d</i> Croydon*		<i>h</i> Port Erin, Isle of Man	<i>d</i> Wimbledon
	<i>d, h</i> Lancaster	<i>d</i> Preston	<i>d</i> Winchester
<i>a</i> Dalton-in-Furness	<i>d</i> Larne	<i>h</i> Prince's Risboro'	<i>h</i> Wrexham
<i>d</i> Darlington	<i>d</i> Leamington		<i>d, h</i> Windsor and Eton
		<i>d</i> Ramsgate	<i>d</i> Wisbech
		<i>d</i> Reading	<i>a</i> Wolverhampton*
		<i>h</i> Redcar	<i>a</i> Worcester
		<i>h</i> Redditch	<i>d, h</i> Worthing
		<i>d</i> Rhayader	
		<i>d</i> Richmond, Surrey	<i>a</i> Yarm
		<i>a</i> Ringwood, Hants	<i>d</i> Yeovil*
		<i>d</i> Rochdale	<i>a, d</i> York
		<i>a</i> Rodley, near Leeds	<i>d</i> Youghal

NOTE.—At the time of going to press we have not received signed authority for the use of "Dark-rooms" marked\*; but they were all placed at our disposal last year, and are doubtless available.—Ed. AM: PHOT:



APPLICATIONS for letters of introduction must be accompanied by **three penny stamps**. Full particulars are given as to charges (if any); plates, chemicals, etc., kept in stock by dealers; terms for temporary membership of societies, etc., etc.

THE OWNER of Dark-Room will be advised by same post as the applicant. In order to prevent delay, all applications should be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., and plainly endorsed "Dark-Rooms."

CONTINENTAL DARK-ROOMS.—Information can be supplied respecting many Dark-Rooms on the Continent, and addresses given of firms who stock photographic materials.

#### LABELS FOR BOXES OF UNEXPOSED PLATES.

The following list in different languages may prove of service to the tourist; it has been kindly supplied to us by Mr. W. E. Woodbury:—

*English*.—Sensitive photographic plates, which will be quite spoilt if opened in the light. Only to be opened in a totally dark room or by a red light.

*French*.—Plaques photographiques sensibilisées qui seront gâtées si on les expose au grand jour, par conséquence n'ouvrir la boîte que dans une chambre parfaitement obscure ou éclairée à lumière rouge.

*German*.—Photographische Trockenplatten, welche sehr lichtempfindlich sind. Werden ganz verdorben wenn man sie dem Tageslichte ausstellt. Die Schachtel muss desshalb nur in einem finsternem Zimmer, oder beim rothen Lichte geöffnet werden.

*Spanish*.—Las placas fotograficas sensitivas, que se inutilizan si se las expone al abrirlas a la luz del dia, se pueden abrir sin inconveniente en un cuarto enteramente obscuro o iluminado par luz roja.

*Portuguese*.—Laminas fotograficas sensitivas. Nao podemsem expostas á luz porque se inutilizam; podendo só ser abertas eh camara, escura oce com luz vermelho.

*Dutch*.—Chemisch toebereide photographische platen weke gehue bedorven worden als zy aan de lucus worden blaagteschild. Alleen te openen in eene donkere kamer of by rood licht.

*Italian*.—Lastre fotografiche sensitive le quali si guasteranno se esposte alla luce. Debbono aprirsi soltanto in una stanza perfettamente buja o dove regni una luce rossa.

*Norwegian*.—Fölsomme fotografiske Plader, som fuldstændig fordærvet ved at udsættes for Lyset. Bør kun aabnes i et aldeles mørkt Rum eller ved rødt Lys.

*Swedish*.—Sjuskänsliga fotografiska plåtar, blifva förstörda om de utsättas för ljus. Fås därför ej öppnas utom i ett absolut mörkt rum.

*Modern Greek*.—Ἐνάλθηται πλάκες διὰ φωτογραφελαν αἰτρες διαφθέρονται εἰν ἀνοιχθῶσιν εἰς το φῶς της ἡμερας. Ὁφέλονται να ἀνοιχθῶσιν εἰς δωμάτιον σκοτεινὸν ἢ με φῶς ἐρυθρῶν.

*Turkish*.—بوسدق نورونه بولنان قوطيلارى نى فوتوغراف جاملى حس اولمخه ايد نيله چتاريلخه بوزولغر اولد بفرق قوطيلرك اصلاخا كورمز برغر اكلق اولد دى قرمزى جاملى درفانار ايله اجلوب معاينه ايتدير لمسى و بوجاملرك ايد نيله چتار لمسى التماس اولنور

*Arabic*.—شيشه هاى عكاسى اكر ورجاب اوشنى باز بشوز بگ خراب وبصرن خرا هشد برباير باكمال اخياط وراطق تاريخى بازكرده و باروشائى قرنراتمان كانشد

*Russian*.—Чувствительныя Фотографическяя пластинки которыя будут совершенно испорчены, если открыты ихъ при обыкновенномъ свѣтѣ. Онѣ могутъ быть открыты только или въ совершенно темной комнатѣ или а при освещеніи краснымъ саттвомъ.



**Photographic Society of Great Britain.**—There is on view at the Society's rooms, 50, Great Russell Street, W.C., a collection of prints in colours illustrative of the application of photography to chromolithography, chromo-typography, chromo-collotype, and chromo-photogravure. The exhibition will be open daily to the end of June between 2 and 9 p.m. Admission on presentation of visiting card.

**Royal Naval Exhibition.**—It may interest those of our readers who propose to visit this exhibition, to know that there is a stall there on which are displayed a number of photographs entirely the work of officers in the Royal Navy, some very fine pictures being amongst them. The photographs are for sale, the proceeds being for charitable purposes.

**"My Photographer."**—Mr. John Piggott, of Cheapside, is moving with the times, and has taken measures for the enlargement of his premises, so that he can add a photographic department to the already extensive list. Mr. Piggott goes on absolute cash principles, and so can sell at the lowest possible prices. For instance, he sells quarter-plates at 11½d. a dozen, and other things in proportion. Those who know Mr. Piggott's business enterprise will not be surprised at this new development of it, and will probably send for one of his photographic catalogues before making their season's purchases.

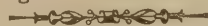
## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

A GOODLY number of members attended the first Saturday ramble of the Edinburgh Photographic Society on Saturday. The party left the Waverley station by the 2.10 p.m. train, and after a run of less than half-an-hour, through the beautiful undulating country to the west of Edinburgh, and across the Forth Bridge, they alighted on the outskirts of the ancient town of Inverkeithing. The day was bitterly cold, with sometimes a shower of snow, and there was a teasing north-easterly breeze, which were serious disadvantages, but, on the other hand, the air was remarkably clear. Those, therefore, who had the good fortune to get an exposure free from moving foliage, had an opportunity for producing good work. The favourite exposures were at first within the burgh, on the quaint old church, the rather plain-looking tron-house, and the Cross, and afterwards, on going further afield, the harbour and bay, Rosyth Castle, St. Margaret's Hope, which is the usual anchorage in easterly storms, etc. The quality of the work which was done will not be shown publicly till November.

The Edinburgh University Photographic Society, which I mentioned last week, had a very entertaining meeting on Monday night, under the presidency of the versatile Dr. Drinkwater. Mr. Wm. Hume, Lothian Street, put himself to great trouble in preparing for his communication on enlargements and enlarging, but he had the satisfaction of securing the attention of a most intelligent audience. His remarks were illustrated by his own Cantilever enlarging apparatus, the easy manipulation of which he was able to demonstrate to perfection. In focussing, the apparatus not only can be moved to or away from the object, but there is a double movement on the apparatus itself, the bellows in front and the lamp behind being both moveable in the simplest manner. Besides, the whole apparatus lifts away, piece by piece, and thus every part is accessible for cleaning or repairing. Mr. Hume showed how to focus both by moving the apparatus and by moving the lens or lamp, and he also showed how by taking away the lens the apparatus was suitable for the illustration of medical and surgical specimens in lectures, thereby better acquainting the hearers with the subjects under discussion, and saving the lecturer from much blackboard or diagram work. Regarding the construction of the lamp, Mr. Hume said he found that two or three wick lamps with the wicks edge on, gave unequal illumination, and he always worked with the flame of the lamp flat on. He showed a number of enlarged photographs by himself, all of which were greatly admired. The vote of thanks which was accorded to him at the close, on the motion of the Chairman, was thoroughly deserved. It was arranged that the next meeting of the Society would be held on the second Monday in June, and that there should be competitions at the next two meetings, the first to be on "Micro-Photography and Grouping," or a picture to represent "There's many a slip between the cup and the lip," and the second upon portraiture or architecture, or a medical or surgical subject.

A series of forty-eight photographs of 16 by 14 size, illustrative of the Forth Bridge, from its commencement till its completion, has been placed in the Edinburgh Museum of Science and Art. As many of your readers may be desirous of photographing the bridge, it may be useful to them to know that it can be best "fielded" from a pathway on the high ground to the west of the railway station at South Queensferry. From there it is an afternoon view. A late afternoon view of it can be got on the north side of the Firth, from high ground above the public road leading to Inverkeithing, but the ground is kept private, and photographers might be disturbed in it. Almost any other situation than these two give either only a portion of the bridge, or show it too much end on to be useful as a picture. There are many points from which portions may be photographed, such as the shore at South Queensferry, the railway pier at North Queensferry, or the pier at Port Edgar for a distant view. If a picture of the wonderful interlacing of the steelwork is desired, there is no better place than right under the structure at North Queensferry, unless permission were granted to go on the bridge itself, which is somewhat difficult, and indeed is practically impossible, for tourists to get.



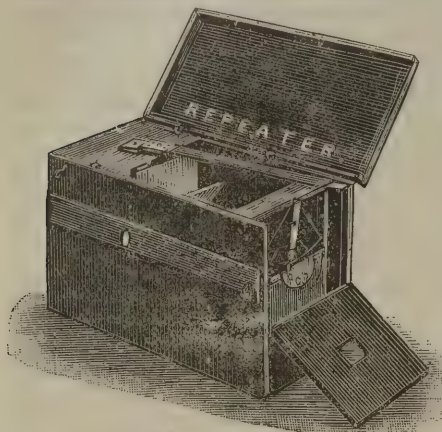
**Peterborough.**—At the monthly meeting on the 11th inst., Mr. Marsh read a paper on "The Photographic Lens, and How to Test it," illustrating it by different makes of lenses, and by diagrams on the blackboard.



## Apparatus.

### CUSWORTH'S "REPEATER" HAND-CAMERA.

THIS is one of the simplest hand-cameras in the market, and as, beyond the plates, there are practically only two moveable parts,



it is next to impossible for it to get out of order. The usual form is made of ebonised wood, looking neat and effective, and carries twelve quarter-plates, which are held by elastic bands to thin wooden carriers, and then put into the camera close together, there being no grooves or things of that sort for them to be put into. There is the end of a lever

slightly projecting from the front of the camera, and by moving this across from one side to the other the plates are changed and the shutter set at the same time, the consequence being that if the lever has not been moved and plate changed the shutter will not act. The shutter is released by touching a trigger at the side. The lens is of fixed focus, and is provided with rotating stops, easily manipulated from the front of the camera, which, when charged with plates, weighs less than four pounds.

### THE "TENSION" HAND-CAMERA.

Mr. Carter, of 15, Gerrard Street, Warwick, has sent us for examination one of these cameras, which he assures us is entirely his own work, and he can, therefore, guarantee that it is well made. The camera consists of a double chamber, the exposure taking place in the top one, and the plate, after exposure, is allowed to slide further down its own groove to the bottom chamber. There being one continuous groove for each plate, there is no chance of a sheath sticking. The reservoir, which contains twelve quarter-plates, is easily charged, and the whole arrangement is extremely simple. The finder is a peculiar one, and consists of a convex mirror which falls just in front of the lens, and a plane reflector, so that the centre of the picture comes absolutely in the centre of the reflector. An R.R. lens is fitted to a revolving plate, so that its position can be changed; and there is also an arrangement for focussing. The shutter works behind the lens, giving longer exposure to the foreground than to the sky. Altogether the camera is one to meet the requirements of the average hand-camera photographer.

## Quarterly Examinations in Photography.

**Question 17.**—Define the word "amateur" as applied to photographers, and state clearly your views on the subject. (300 words allowed.)

**ANSWER.**—The word amateur is derived from the Latin *amator*, a lover. An amateur photographer is a person who practises photography for love and not for money.

So far it is all plain sailing, but very soon difficulties appear. A man may not be a professional photographer, yet temptations may arise to make something out of his work.

Friends, who have perhaps been his companions on a tour, wish to have prints from his negatives and to pay for them. He gets a successful portrait of a friend, and is asked to sell the prints. A friend wants a house or a dog or a horse photographed, and begs to be allowed to pay expenses. A good deal is to be said on both sides in answer to the question, "Does a man forfeit his right to be called an amateur who accepts any one of these and similar offers?"

My own judgment, however, is, the amateur had much better let alone. He may have three motives for doing what he is

asked. It may be interesting work, or he may be willing to do uninteresting work out of friendship, or he may be willing to do it for money. In either of the first two cases he is an amateur, a lover of photography or a lover of his friend. In the last he is a lover of neither.

If a friend wants prints, lend him the negative, and let him give the job to a professional; if he wants work done, do it for love of the art or for love of your friend, or leave it undone. One thing should, I think, be permitted. An amateur should be allowed to sell work *bona fide* done for other purposes than for sale. Prints at an exhibition, negatives, which have been taken for pleasure, he should be allowed to sell if he gets an offer for them. The whole things lies in the object of work. A man is an amateur who works for the pleasure of the work. He ceases to be one the moment he works for profit.

R. C. M.

**Question 18.**—Forward a short article upon some "holiday resort," complying as far as possible with the rules laid down in "Our Views," p. 110, May 1st, 1891. (350 words allowed.)

**ANSWER.**—I can imagine no more perfectly delightful place in which to spend a few days than Iona. It is easily got at when once you are in Scotland, as Macbrayne's steamers go every day from Oban, the return fare being 17s. There are two hotels, the "St. Columba" and the "Argyle Arms," both fairly comfortable. There is almost every variety of interest on the island. First, of course, in importance are the architectural subjects. Of the cathedral I have fifteen negatives, all of very great interest. A rather short-focus lens will be useful for the interiors and for some of the exterior subjects. You will find something to do at any time of day. The doorway of St. Oran's chapel is, perhaps, the best architectural subject on the island, and inside this, as well as in the nunnery, is a perfect mine of wealth in tombstones, many of them beautifully carved. The two crosses are most curious, and the nunnery will yield many studies.

The people are, like most Highlanders, picturesque, and there are some highland cattle on the island. At Columba's Bay, about two miles off, I got some capital instantaneous shots of breaking waves, and the studies of rock and water are endless. I used my bedroom as a dark-room. There were fairly effective shutters. I had some difficulty in getting water to wash my negatives in, the island is so small there are no burns to speak of.

I spent five days there, but we did not make any expeditions to Mull or to Staffa, which is within reach by boat on a fine day. I believe one could spend a fortnight there very pleasantly. Our hotel bill came to about 9s. a day, but I fancy a much cheaper arrangement could be made, and lodgings can be got for a prolonged stay. It is impossible to see Iona properly in the hour the steamer gives, two or three days are necessary to see the place at all thoroughly.

R. C. M.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Birkenhead.**—The usual monthly meeting of this association was held on the 14th inst., Vice-President G. A. Carruthers occupying the chair. There was a large attendance. Messrs. T. Ferns, John Hardnup, and E. White were unanimously elected members of the association. A long and exceedingly interesting letter from the President of the association (Mr. G. E. Thompson), who is at present on a photographic tour among the Italian lakes, was read. The Secretary had placed in his hands for exhibition several new inventions. An announcement was made with respect to the annual competitions of the current year, it being stated that the annual outdoor competition would be held at Storeton Quarries and Brimstage on Saturday, 27th June.

**Blackburn.**—The first excursion of the summer season took place on the 7th inst. to Fleetwood. There was not a very large attendance of members, as the weather was not very promising at starting, but afterwards improved. Many plates were exposed with varying success on the many interesting objects to be seen—fishermen, boats, sailors, etc.—and a very pleasant afternoon was spent.

**Bradford.**—The monthly meeting was held on the 15th inst. at the society's rooms in Tyrel Street, the President (the Rev. T. Mellorey) being in the chair. Mr. Walter Leach, F.C.S., gave an interesting paper on "The Scientific Relation between Exposure and Development of Photographic Negatives, with a Description of Actinometers for Calculating Exposures," dealing in a large measure with the recent theories put forward by Messrs. Hurter and Driffild



on exposure and development. After a short discussion, a hearty vote of thanks was accorded to Mr. Leach for his instructive paper. Various descriptions of actinometers were shown, as were also a Caldwell shutter, by Mr. I. Sonnenthal, and a new hand-camera, designed by Mr. Leach and made by Mr. C. Grayson, of Bradford, which was much admired for its compactness and lightness.

**Bolton.**—The ordinary meeting was held on the 15th inst., Mr. E. N. Ashworth in the chair. The 1890 Prize Slides of the AMATEUR PHOTOGRAPHER were exhibited by Mr. Banks and the Hon. Secretary. The slides of Mr. J. E. Austen received well merited applause, as did those of Mr. Watson, showing the marble staircase of the new municipal buildings, Glasgow.

**Cambridge.**—The monthly meeting was held at 7½, Jesus Lane. The attendance of members was good. A large selection of prints were on view for study and criticism, kindly lent by the Editor of the AMATEUR PHOTOGRAPHER. A paper was read by Mr. F. H. Sanderson, on "Photographic Apparatus." A vote of thanks having been passed to the Editor for loan of prints, and to Mr. Sanderson for his paper, the meeting terminated.

**Croydon Micro.**—At an extra lantern evening on the 15th inst., Mr. Edward Lovett, President, in the Chair, Mr. J. A. Sinclair, of the Liverpool Amateur Photographic Association, gave an illustrated lecture entitled "A Scamper across Normandy with the Camera." Mr. Sinclair started his tour (in company with two friends) from Liverpool to London, and from thence to Dieppe, Rouen, Caudebec Pont Audemer, Lisieux, Falaise, Caen, Bayeux, St. Lo, Coutances, Mont St. Michel, and from thence home. Mr. Sinclair interspersed, his lecture with highly interesting, curious, and laughable incidents that occurred during his travels. The pictures were taken on Ilford ordinary plates, and the fine interiors of the French cathedrals that Mr. Sinclair had taken were particularly noticeable for their freedom from halation, and the whole series of pictures illustrating the lecture were of the highest technical excellence; the final picture of the evening, entitled, "A Farewell to Normandy and the Seine," a sunset picture, was worthy of special notice. On Saturday May 23rd there will be a half-day excursion to Groombridge, conducted by Mr. J. A. Carter.

**Glenalmond.**—The second meeting of the Midsummer term took place on the 16th inst, the President (Mr. A. S. Reid) in the chair. The President gave a lecture on "The Development of Instantaneous Photographs by a Mixture of Hydroquinone and Eikonogen," showing some prints, the negatives of which were developed by that mixture. Mr. R. Johnstone also showed some prints, one of which was a photograph of the club taken at the end of the Easter term by himself. The meeting adjourned at 9 p.m. till Saturday, May 30th. At the previous meeting the officers for the term were elected thus: President, Mr. A. S. Reid, M.A., F.G.S.; Hon. Secretary, Mr. E. H. C. Craig; Hon. Treasurer, Mr. J. H. Maxwell; Keeper of books, Mr. W. H. Maxwell; Keeper of the album, Mr. W. G. Harrison. About five new members were elected.

**Guildford.**—On the 12th inst., at the ordinary monthly meeting, Mr. A. E. Moon read a paper on "Impurities in Chemicals used in Photography, and how to Detect them." He illustrated his remarks by means of the optical lantern and chemical tank, showing on the screen the changes produced by various chemicals in the presence of foreign matter. The paper proved very interesting and instructive, and a good proportion of the members attended.

**Hackney.**—The annual general meeting was held on the 14th inst. Mr. Walter Wesson presided. The following gentlemen were elected for the ensuing twelve months:—President, Dr. Roland Smith; Vice-Presidents, Dr. Ambrose Kibbler, Messrs. J. Hubert, Frank Jolly, and J. A. Sinclair (the latter gentleman was formerly of the Liverpool Society); Treasurer, J. O. Grant; Curator, S. H. Barton; Council, W. L. Barker, H. J. Beasley, Walter Wesson, A. Dean, F. Houghton, C. F. Hodges. Mr. Fenton Jones (6, Victoria Street, Hackney) was re-elected Hon. Secretary. The report (third year) was a very satisfactory one, and progress is being made. The Hon. Secretary read a short paper on the different developers now used, and preferred, for pyro development, Wratten's, Lange's, and one by the President, in which a saturated solution of sulphite of soda was used. The best quinol formulæ, he thought, were the Ilford and one given by Mr. McCormack, and eikonogen that of Warnerke's. A lively discussion ensued, in which Messrs. Gosling, Reynolds, Gilbert, Dean, and others took part.

**Holborn.**—The monthly instruction to beginners night of the Holborn Camera Club was held on the 15th inst., Mr. R. Luxton in the chair. Mr. A. J. Golding first demonstrated on the platinotype process. In the course of his remarks on the process, he said it would recommend itself to all amateurs for its simplicity and also for its permanence. He developed, by the hot-bath process, six prints which he brought up with him, all turning out successfully, although had the bath been of a slightly lower temperature, perhaps better results would have been obtained. Mr. G. H. Bayston then demonstrated on bromide paper prints from the same negatives as Mr. Golding had used for his platinotype prints. Using the hydro-

quinone developer, he obtained some excellent results. Taken on the whole, the evening was a very instructive one, and very satisfactory to the members who had attended the meeting. Before the meeting separated, the Secretary read a circular letter *re* Mr. Biden's proposed federation of societies scheme, and it was decided that, as it was understood that the Photographic Society of Great Britain had also a scheme in hand, it was desirable to wait and see if the Photographic Society of Great Britain's scheme came to anything, most of the members being of the opinion that two federated societies would end in downfall of both.

**Jersey.**—At the monthly meeting at St. Heliers, on May 12th, the principal feature was the reading of a paper by the President, Capt. T. Lamb, on "A Tour with a Hand-Camera," in which the author related his experiences with one of these instruments during a recent trip on the Continent, and illustrated his paper by specimens of the work that had been done. He expressed his opinion that every amateur should possess a hand-camera, in addition to his larger apparatus, and as those who had not yet had experience of their use were apt to be bewildered by the variety in the market, he stated briefly what he considered to be the requirements of a hand-camera. The lens, he said, must be rapid (working at least at  $f/8$ ), and if only one lens can be used in the camera, the focus should be about  $2\frac{1}{2}$  ins. His own camera has two lenses—an RR. of 6 in. focus, which was used for all snap shots, and a 4 in. rectilinear for time exposures, which has the advantage of a wider angle of view. Captain Lamb found the 4 in. lens to be the most generally useful for time exposures. In a hand-camera the shutter is an especially important part, it being more than ever necessary that it does not shake; and it should be capable of giving any exposure, from 1 sec. to the hundredth part of a second. The best kind is one that works between the lenses, opening from and closing to the centre; but it is expensive. The next best is the Thornton-Pickard or roller-blind principle. For Continental travelling, glass plates are out of the question, owing to their weight; he used celluloid films, and found Desiré England's (ordinary rapidity) to be the best. Developers are, of course, much a matter of taste; but Captain Lamb always uses pyro for negatives, and hydroquinone for transparencies. Hyposulphite can be got anywhere. In the course of the lecture a number of lantern slides were exhibited, some to show the difficulties of architectural subjects; others of a detective character, showing people photographed without their knowing it; others of Eastern Alps; others of streets, canals, moving objects, with a slow exposure of about a quarter of a second; besides many other matters of interest.

**Paisley.**—The members held their first outdoor excursion of the season on the 16th inst., when a large party visited West Kilbride. The old castles of Portincross, Law, and Crossbie were photographed by some of the members, while others gave attention to the glen and views of the beach at Seamill.

**Sydenham.**—An ordinary meeting was held on the 12th inst., the President (Mr. C. D. Budd) in the chair. Mr. L. Wiltshire read a long and exhaustive paper on "Silver Printing." Having described the method of preparing the paper, various sensitising formulæ were given and several practical suggestions made, which will, no doubt, be found of great use to the members of this club. A long discussion followed, in which part was taken by the President and other ex-workers of the old wet-plate process.

**The Phot. Soc.**—At the meeting held on the 12th inst., Mr. J. Glaisher, F.R.S., President, in the chair, Messrs. L. S. Bruce, H. Holiday, and O. E. Pearce were elected members of the Society. A paper by Mons. Leon Vidal on "Photographic Methods of Obtaining Polychromatic Impressions," was read by the Assistant Secretary. In this paper the author described simple and composite photochromy. In simple photochromy a negative of the subject is taken on an orthochromatic plate, a collotype plate is prepared from it, and transfers laid on as many stones as there are colours required. The stones are worked by a lithographic artist, and printed in the usual way; to complete the picture, a collotype impression is printed over the colours. In composite photochromy three or more negatives are taken through suitable colour screens; these are retouched if necessary, made into collotype plates, and printed in the usual way. The paper was illustrated by lantern slides and specimens. The Assistant Secretary had got together numerous examples of photochromatic work which were hung upon the walls. Mr. J. Spiller, referring to the collection, said that they proved the great advance that had recently been made in reproductions in colour, especially referring to three examples by Hanfstangel, of Munich, and to a series of Swiss views by the Photochrome Co., of Zurich. Mr. G. L. Addenbrooke urged that the discussion should be adjourned till the members had had an opportunity of studying the paper and the exhibits. Mr. V. Blanchard said that Mr. Woodbury was the discoverer of the process described by M. Vidal. Dr. E. Albert mentioned that he had applied composite photochromy to type blocks. Votes of thanks to M. Vidal and the exhibitors terminated the proceedings, the discussion standing adjourned.



**Wolverhampton.**—The monthly meeting was held on the 12th inst. This is the first general meeting the society have held in their new quarters, which seemed to give general satisfaction to the members present, the large room being admirably adapted to lantern exhibitions and the hanging of pictures. It is hoped that in a short time extra accommodation in the shape of a dark-room, etc., will be provided. The last lantern lecture of the season was given by Mr. I. Meachem, the subject being "Mining Photography." After explaining the many difficulties experienced in this branch of photographic work, viz., the total absence of light reflecting surface, the very confined situations, and the great difficulty of keeping the lenses free from condensation, he stated that most pictures of miners at work were nothing like what they were supposed to represent, and that photography was here of great service in securing a faithful representation of this industry. He illustrated his remarks by

showing a series of photographs (with the aid of the optical lantern) of the different workings of a coal mine and the miners at work. The lecturer concluded by giving a general invitation to the society to visit the mines under his control, and photograph the various stages in the manufacture of iron, from the mine to the finished product. The "Itakit" detective camera was handed round by Mr. J. W. Evans for inspection.

**Wakefield.**—The second monthly meeting was held on the 12th inst. in the Market Cocoa Tavern. The President, Mr. A. Stanfield, J.P., delivered his inaugural address, and tendered advice on the choice of apparatus, printing process, etc., and also entered upon the composition of pictures, illustrating his remarks by prints made by himself, etc. Mr. H. Chaplin showed Pearson and Denham's lantern slide camera, and other members brought negatives, prints, and apparatus.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the *number and full title of the query* referred to.

## QUERIES.

4690. **Omnigraph.**—Can any reader recommend Lancaster's Omnigraph hand-camera, or any other at the same price and of equal simplicity?—**OMNIGRAPHIST.**

4691. **Toning Bath.**—Which is the best bath for black tones? What I require is a greyish black. How can I get it without keeping print too long in bath and thereby making it faint?—**C'EST MOI.**

4692. **Optimus Magazine Camera.**—(1) What is the best way for charging? My sight is not very good, and I find difficulty in placing in proper grooves with a red light. (2) Is there any lamp with yellow glass which can be used for this purpose without fogging the plates? I use Ilford ordinary plates, but they frequently catch in the grooves owing to being too thick.—**C'EST MOI.**

4693. **Covering for Hand-Camera.**—Having made a hand-camera, I wish to cover it with black leather similar to Kodak and many others. Where can the material be obtained? How is it applied, and are any instruments necessary? Is the process difficult to manage?—**J. W. W.**

4694. **Stained Negative.**—Can any kind amateur inform me how to eradicate a reddish stain which covers the whole of a negative? The stain made its appearance during intensification.—**W. B. P.**

4695. **Lens.**—Is there any difference between Dallmeyer's and Ross's rapid rectilinear? Will the former's 8 by 5 R.R. cover a  $\frac{7}{8}$  by 5 group, as in his catalogue it says, size of group 5 by 4 with the 8 by 5 lens?—**PENALLY.**

4696. **Antwerp.**—I am thinking of going to Antwerp for a day or two. Can any one who has been tell me of a comfortable house or cheap hotel, as I cannot afford much? Can I do it with the English language, as I know no other. I should go to Van Neck's to change plates, etc. Shall be pleased of a hint or two about money, the customs, etc. Any information will oblige.—**A RATHER NERVOUS ONE.**

4697. **Views, Where to Get.**—Would any one kindly give me a list of places (within three-quarters of an hour by rail of London) where it is possible to get four or six half-plate views without walking over four or five miles respectively?—**N. M. H.**

4698. **Barnet Plate, Rapidity of.**—Elliot's Barnet plate: Can any one kindly tell me the relative

rapidity of this plate to the Ilford ordinary, also a good hydroquinone developer for same?—**N. M. H.**  
4699. **Carbutt's Orthochromatic Films.**—Can any reader who has had practical experience of Carbutt's orthochromatic celluloid films tell me what is the difference between them and Edwards' isochromatic plates in the power of giving correct colour values? Also are Carbutt's films as thickly-coated and of as good quality as Edwards' plates?—**A. H. W.**

4700. **Pickard's Exposure Meter.**—Can any one recommend me Pickard's exposure meter, and also a good brand of plates that work well with the exposures indicated by it?—**IN DOUBT.**

4701. **Shutter.**—What is the longest exposure that can be given with Lancaster's quarter-plate 1891 Instantograph shutter, as supplied with camera?—**S. M.**

4702. **Focal Length.**—What is the focal length of Lancaster's quarter-plate Instantograph lens (1891)?—**S. M.**

4703. **Developer, Eikonogen.**—Would any reader of experience kindly give reliable formula suitable for bromide enlargements up to 12 by 10, and also one for instantaneous and ordinary plates?—**SCOTIA.**

4704. **Channel Islands.**—Being desirous of visiting these islands during August, I shall be glad of any information such as places to make headquarters to work from, places to visit, list of dark-rooms at disposal, also is there any trouble with the customs in returning, quality of light as compared with Cheshire?—**S. L. COULTHURST.**

4705. **Shropshire.**—I shall be spending a few days in Shropshire during the summer, and shall be glad of any information relating to points of interest for the camera, especially in the neighbourhood of Much Wenlock and Hughley, the latter of which places will be my head-quarters.—**F. B.**

4706. **Permission to Photograph.**—I shall be greatly obliged if any amateur photographer who has been in any of the following parks, gardens, etc., viz., Hyde Park, Richmond Park, Battersea Park, Victoria Park, St. James's Park, Regent's Park, Kensington Gardens, Kippington Forest, and any other parks or gardens there may be in or near London, could inform me which are the best parts and how many plates (half-plate) could I expose in an afternoon, making a choice selection in each park or garden, going through, say, two every afternoon? Also which and where are the best entrances, and how can I obtain a license for the purpose of taking photographic views in Kew Gardens?—**W. H. ELLIS.**

4707. **Lewis, Island of.**—I purpose taking my camera to the Island of Lewis (Hebrides), and should be glad if you or your readers would kindly tell me if I could get any photographic materials in that outlying place, or would I have to take everything with me? I want to make a series of prints on the spot, so that I will have to develop my plates from day to day. Would it be well to take films and a printing-out paper that gives the least trouble?—**Q.**

## QUERIES UNANSWERED.

April 24.—No. 4638.  
May 1.—Nos. 4647, 4648, 4653, 4654, 4655, 4657, 4658, 4659.  
" 8.—Nos. 4668, 4671, 4674, 4675.  
" 15.—Nos. 4679, 4680, 4682, 4683, 4684, 4686, 4688.

## ANSWERS.

4665. **Pompeian Blue.**—"Quis" will find what he wants on p. 88 of the **AMATEUR PHOTOGRAPHER** for February 7th, 1890, No. 279, vol. xi.—**NIEPCE.**

4667. **Testing Shutters.**—Will "H. Leach" kindly give an instance of the "simple mathematical calculation"?—**PHONE.**

4681. **Snap-Shot Developer.**—The word grams is a printer's error, and should be grains. As to how to make Solution B, the simplest way is to put a quantity of common washing soda in a bottle, pour over it some warm water, taking care always to leave some undissolved soda in the bottom; you then always have a saturated solution. To use as developer, take one part of A to seven of B. If more density is required, add more of A.—**F. YOUNG.**

4685. **Llandrindod.**—Llandrindod has plenty of

good hotels, whose tariffs are very reasonable. Plenty of snap-shots may be had there, but the chief things to be taken are the waters. Trefriw is the place for tit-bits, where anybody with an eye for beauty can fill any amount of plates. The beautiful woods of Gwydir Castle, the old church, lakes and bridges galore, enough to satisfy the plate capacity of any reasonable amateur.—**SLIP.**

4687. **Reliable Half-Plate Camera.**—"K. M. W." could not do better than get the British camera, made by Mr. Chapman, of Manchester. It has every movement, and is strong and reliable in every way. The price is £5.—**SCOTIA.**

4689. **Toning Aristotype.**—I have used with complete success the formula given in the printed instructions for Aristotype paper for fixing and toning in one operation. The process is thereby conducted with a minimum of trouble. The only point to remember is that the print must be several shades darker than it is intended to appear when finished.—**DUPLEX.**

4689. **Toning Aristotype.**—The following appeared in the "Amateur Photographer's Annual" 1891:—Print deeply, and immerse without washing, in the following bath, which may be used at once, and will keep fairly well:—

Hypo	...	...	240 gr.
Ammonium sulphocyanide	...	...	50 "
Acetate of soda	...	...	15 "
Chloride of gold	...	...	2 "
Water	...	...	3 oz.

Prints will at first turn a sickly yellow, but will gradually assume a brown tone, then purple, and, finally, a warm black. Rinse, and give five minutes in a 5 per cent. solution of alum, then wash well as usual. The above tones and fixes at the same time.—**S. M.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us **BEFORE TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED. AM. PHOT.**

**R. GRINDLE.**—We gently breathed on your sample of paper and placed it under a negative of ordinary density and exposed it in the sun; we obtained a distinct impression in half a minute and a fairly strongly printed-out image in four minutes, which was quite dense enough when washed in the acid bath. Your paper is too dry; expose the sheets to a damp atmosphere for a short time before exposing to light.

**A. W. OOK.**—The following is the formula you want:

Chloride of gold	...	...	4 gr.
Uranium nitrate	...	...	4 "
Salt	...	...	60 "
Sodium acetate	...	...	60 "
Distilled water	...	...	32 oz.

Disolve the gold and uranium in a little water, neutralise by adding carbonate of soda, then add the other ingredients previously dissolved. Print, deep; wash the prints free from silver before toning.

**Geo. E. BRYANT.**—Your name is entered, but you were too late to receive the exposed plate. We forward you one, however, now.

**A. P. G. D.**—We hope to forward it in a week or so; it has not yet arrived from the engraver.

**H. J. KNIGHT.**—Thanks for article and letter; the former we shall have much pleasure in using, and we will keep the latter before us.

**W. B. LONG.**—We should say that No. 2 would be decidedly the better of the two for the purpose, and as to the second part of the question we should recommend C. We are afraid we cannot oblige you with any hints on exposure for that particular place, but remember to expose for the shadows.

**S. A. SMITHERS.**—The lantern is a good one at the price; you could use the front lens for the purpose you mention; we should prefer it to the cheaper one.



E. K. DENHAM.—The Holiday Tour Competition was this year represented by the "Holidays with the Camera" Competition, and there is another, "Photography at Home," the prints for which must be sent in by the 30th June.

P. R. S.—Thanks for the article, which we will use in the near future.

S. L. COULTHURST.—It will be sent in the course of a day or two.

S. G.—The lantern is very good at the price, and has done good work of the kind you mention. Any of the bromide papers are good; probably the rapid would be best for your purpose. The ordinary borax toning bath will answer for the paper:

Borax	...	...	...	20 gr.
Gold	...	...	...	1 "
Water	...	...	...	8 oz.

Either developer will do for bromide paper.

A. V. DYER.—Your best plan would be to ask in our Query columns; there was an offer some few weeks ago which may help you.

OLD HAND.—(1) For magazines try Lancaster's Rover, for dark slides Loman's Reflex. (2) For films the Kodak.

## Quarterly Examinations in Photography.

### QUESTIONS.

- Forward a bromide print from the negative you have in your possession (Question 16), and tone the print to a brown colour, giving full details of the method of procedure.
- What is the cause of (a) want of vigour, (b) mealy prints, (c) white marbly marks, (d) black marbly marks, (e) black specks in albumen print?
- How would you set to work to reproduce an oil painting, the colours of which have to be, as far as possible, correctly rendered? What light would you employ: sunlight, diffused light, or lamplight?

(Latest Day for Answers—June 1st.)

### RULES.

- Answers must be received on the morning of the Monday week following the publication of the question.
- All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.
- A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.
- Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.
- Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed to:—  
"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

RULES.—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

N.B.—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

Advertisements can be inserted under a number,

the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, from 166 to present date, 15s.; "Photography," 43 to 130, 4s. 6d.; vol. 1. "Reporter," 2s. 6d.; or offers exchange.—Avery, 45, Park Street, Dorset Square, London.

AMATEUR PHOTOGRAPHER, vol. 1. to date, bound, for sale, or exchange for 5/4 Casket single lenses; difference adjusted.—O. J. Leaper, 4, Chester Road, Dublin.

"Photographic Reporter" from the beginning, and AMATEUR PHOTOGRAPHER, complete for last five years, for exchange or sale, cheap.—T. Metcalfe, Cotswold House, Cirencester.

Cameras, etc.—Lancaster's 1889 half Instantograph, complete, excellent condition; 69s. 6d.; or offers.—Fred Fenwick, Jesmond Dene, Newcastle-on-Tyne.

Cameras, Lenses, etc.—For sale, the property of a private gentleman, all in good condition; offers requested; may be seen at Stanley's, 13, Railway Approach, London Bridge, S.E.: Whole-plate bellows camera, one single and three double backs, Dallmeyer lens 3D, 7½ by 4½ bellows camera, with one single and six double backs, one light sliding tripod stand, two plate boxes, 7½ by 4½, and six light-tight ditto, three 5 by 4 plate boxes and two light-tight ditto, one 3½ in. lantern condenser, also a quantity of dry plates and good apparatus for electrical experiments.

A half-plate Instantograph camera, two backs, tripod, and bag, price 30s.; or with rapid rectilinear lens, £4.—Ingham, 15, Seymour Grove, Old Trafford, Manchester.

Underwood's whole-plate Tourgraph, three double backs, lens, tripod, waterproof bag; £3 15s.; bargain; cost £6 5s. 6d.—Franklin, Castle Street, Shrewsbury.

Whole-plate camera and rapid rectilinear lens; cost £8 three months ago; will sell for £5 10s.—May, 4, Rosina Street, South Hackney.

Underwood's half-plate Instanto, double extension, reversing back, all movements, lens, stand, instantaneous shutter, view-finder, and extra front, capital condition, worth over 90s., sell for 60s.; also excellent cabinet portrait lens, 30s.; approval.—Drake, Amherst Villa, Polsoe Road, Ekeater.

Camera, 5 by 4 (Horne and Thornthwaite), magnificent portrait lens, slide, etc.; 40s.; bargain.—George Carter, 27, Albert Road, Peckham.

Lancaster's patent Instantograph 1891 camera, rapid rectilinear lens, double dark-slide, tripod, etc., complete, new; £3 10s. cash; worth nearly double.—Ramus, 27A, Farringdon Street, London, E.C. Letters only.

Bargains, must be cleared. Cyclists' camera, all movements, takes plates 3½ by 2½, can be used as hand-camera, with six double slides, almost new, cost 60s., price 25s.; splendid 5 by 4 rectilinear, also wide-angle, 17s. 6d. each; quarter-plate tripod, 4s.; Lancaster's folding ruby lamp, 2s. 6d.—T. Hall, Pinfold Lane, Lancaster.

Baroness camera, quarter-plate, most fairy-like instrument, every possible movement, new last autumn, perfect condition, fitted with Eastman's roll-holder, quite new, Beck's rapid rectilinear lens, Iris diaphragm, 4-fold stand and solid leather case; price £9 10s.; cost £13 10s.—W. Thomson, Laurel Bank, Halifax.

Lancaster's quarter-plate Instantograph, Wray's 5 by 4 rapid rectilinear lens, new, Kershaw's shutter, view-finder, stand, changing bag, etc.; 50s.—R. Ballard, St. Bartholomew's Hospital.

5 by 4 Optimum extra-rapid Ruryscope, 40s.; 5 by 4 camera, long-extension, leather bellows, fitted with three metal slides and carriers for quarter-plates, 32s. 6d.; portable dark-room, 15s.; strong ash stand, 7s. 6d.; background scene in oil, 10s.—O. W., 307, Great College Street, Camden Town, London.

Hand-Cameras, etc.—No. 4 Kodak, regular, nearly new; £8; or exchange stereo hand-camera, cash if necessary.—Dr. Fitton, Dewsbury.

Perken, Son, and Rayment's hand-camera, carrying 12 quarter-plates, extra-rapid Ruryscope lens, cost 8 guineas, nearly new; £5, case included.—On view at the AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Quarter-plate hand-camera, as new, Hethton Lewis pattern (by Turnbull), suits lenses of 5 and 9 in. focus, six double backs, cost £8 5s.; with Taylor's Iris diaphragm lens, five guineas; camera alone £3 10s.; lens alone, three guineas; approval; deposit.—S. E., 2, Wellington Terrace, Weston-super-Mare.

Lenses, etc.—Ross' portable symmetrical, No. 6, as new, 80s.; McKellen's 10 by 8 mid-angle R.R., 10 in. focus, grand instrument, as new, 60s.; approval with pleasure.—Avery, 45, Park Street, Dorset Square, London.

Splendid new cabinet portrait lens; cost £5; take 50s.; bargain.—T. W. Milburn, Battle Hill, Hexham, Northumberland.

I will exchange my quarter-plate portrait lens (by Dallmeyer, No. 2800) for good half-plate camera and two double slides, must be in good condition; or will sell the lens, with stops, for £3 10s.—J. Boulton, 5, Belmont Street, Rainbow Hill, Worcester.

Dallmeyer's No. 1 wide-angle landscape lens, patent, in perfect condition; price 55s.—J. E. Thornburn, Bothel Low Moor, Aspatia.

Dallmeyer's wide-angle landscape lens, 7½ by 4½, rotating stops, as new; £2 10s. Wanted, slides for Collins' or Stereoscopic Co.'s quarter-plate hand-camera.—A. Spiller, Hillside, Hampstead Hill Gardens, London, N.W.

Roll-Holder.—Eastman's quarter roll-holder, recent type, with about eight exposures; price 30s.; offers?—Telfer, King Henry's Road, Hampstead.

Sets.—A gentleman, prevented by illness from going abroad, will sell a Luzo apparatus, complete, quarter size, plates 4½ by 3½; the machine has never been used; it is perfectly new.—Apply, No. 159, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

On sale, quarter-plate outfit, comprising camera with all latest movements, one double slide, folding tripod, R.R. lens, and two porcelain dishes, condition new, only used twice, about to purchase larger size; will sacrifice lot for £3.—A. R., 45, Digby Road, Queen's Road, N.

Genuine bargain to any gentleman requiring a complete and first-class make outfit. Camera, 7½ by 5 (by Meagher), with extending front, rising and sliding ditto, with partition for stereos, reversing swing-back, and all the latest improvements, three double dark-slides, rapid rectilinear lens (by Taylor), extra strong tripod, all new last autumn; also the following sundries: quarter, half, and 7½ by 5 printing frames, paper mache and iron enamelled dishes, glass shapes, zinc vignettes, burnisher, background, measures, light-tight boxes, carriers, focussing piece, view-finder, and cases, condition guaranteed as new, in one lot, only £12; camera and slides alone cost £10 15s.—G. Sanders, 30, Seymour Street, Liverpool.

Shutters.—Underwood's half-plate Instantolux shutter, time and instantaneous; 11s.; good condition.—H. Gilbert, 52, Edgware Road, London.

Thornton-Pickard time and instantaneous shutter, 1¼ in. hood, preferred with regulating fan, cheap; approval.—Western, Clare, Cambridge.

Sundries.—Eastman film-holder, with about 40 exposures, whole-plate; cost about £5 10s.; half-price.—Major Pollock, Barracks, Glasgow.

Superfine black cloth Cambridge coat, new, 37 in. breast; 10s.; particulars sent.—Mrs. Brickland, West St. Helens, Abingdon.

Photograph, brass-fronted binocular lantern, with accessories, gas governor, induction coil, 2 in. spark, pair telephones, racer bicycle (Rudge), nearly new.—190, Heyside, Royton.

Silver water, patent lever chronograph, for half-plate R.R. lens by good maker; also half-plate camera wanted, with one or more dark-slides, for cash, must be cheap.—Alex. Gillies, Saw Mills, Kilmoreack by Baulry, Invernesshire.

Green's 14 in. lawn mower, perfect order; will exchange for approved photographic goods.—K., West House, Bishop Auckland.

Spring-frame Safety bicycle, Whippet (Linley and Biggs), ball head and pedals; luggage carrier, suitable for carrying camera, Lowne's cyclometer and lamp.—P. Cox, Hermitage, Harrow.

## WANTED.

Cameras, etc.—Half-plate tourist camera, Acme preferred, with stand and case, no lens; approval; cash.—Reynolds, Southover, Worthing.

Chadwick's stereo camera, 6½ by 4½.—State lowest cash price to Butterworth, Bank Street, Darwen.

Half-plate camera, with three double slides; lens, tripod, etc., immaterial; approval.—No. 160, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Modern stereoscopic camera, complete, Chadwick's 6½ by 4½ preferred, must be perfect and cheap.—Geo. Tittensor, 1, James Street, Hull Road, York.

Box or studio camera, with two dark-slides, to take whole-plate portrait lens, must be cheap.—Apply, Omega, The Cedars, Rickmansworth, Herts.

Half-plate camera and double dark-slide, without lens, second-hand, suitable for beginner, must be cheap.—Apply, stating price, J. Simpson, George Street, Coupar Angus, N.B.

Hand-Cameras, etc.—Swinden and Earp's 5 by 4 detective, or Adams'.—W. H. S., 26, Scarisbrick Street, Southampton.

Hand-camera, one of Swinden and Earp's, or Miller's Adelphi; no cards.—No. 161, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Kodak camera, cheap for cash.—Particulars of condition to B., 1, Dermody Road, Eastdown, Lewisham, S.E.

Lenses, etc.—Half-plate rectilinear lens, English preferred, good condition, cheap, cash.—118, Grimsythorpe Road, Sheffield.

7 by 5 and 9 by 7 Optimum R.R., or other good maker, cheap.—Avery, 45, Park Street, Dorset Square, London.

Wide-angle rectilinear lens, about 3 in. focus, good maker, cheap.—Hirst, Bishopthorpe Road, York.

Sets.—Instantograph quarter set, must be recent pattern, good order, and cheap; approval on deposit; state full particulars.—Photo, 20, Carey Terrace, Carey Road, Leytonstone, N.E.



## NOTICES TO SUBSCRIBERS.

*Subscriptions must be prepaid.*

UNITED KINGDOM.....	Six Months, 5s. 6d.....	Twelve Months, 10s. 10d.
POSTAL UNION .....	" " 6s. 6d.....	" " 13s. 0d.
INDIA, CHINA, ETC. ....	" " 7s. 6d.....	" " 15s. 8d.

## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.

## PUBLIC SCHOOLS COMPETITION.

OPEN TO BOYS UNDER SEVENTEEN YEARS OF AGE.

- Class I. Landscape. "Amateur Photographer" Silver and Bronze Medals.  
 II. Portraits, Including Groups " " "  
 III. Animals " " "  
 IV. Architecture " " "

**NOTE.**—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date, June 17th.

## Ladies' Second Photographic Competition

### PRIZES.

FIRST PRIZE. SECOND PRIZE. THIRD PRIZE.  
 GOLD MEDAL. SILVER MEDAL. BRONZE MEDAL.

(These Medals, of the smaller series, will be appropriately mounted as Brooches or Pendants if desired).

**SUBJECTS:** Landscape or Seascape—Landscape with Figure—Portraiture or Figure Study.

**NOTE.**—Entry forms now ready. Send stamped addressed envelope, endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C. Latest date August 22nd.

## COMPETITION.

TWO GUINEAS are offered for each of the best series of 5 PHOTOGRAPHS BY AMATEURS illustrative of either of following places:—

Edinburgh, Dublin (and vicinity), Belfast, Irish Scenery, Glasgow (and Clyde), Bath, Brighton, Torquay, also of Still Life, *expropo*s of either, River, Sea, or Country.

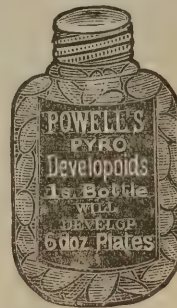
Not more than two principal Architectural Views admissible, the other three to be typical scenes, artistically and unconventionally treated.

**SHARPNESS AND CLEARNESS OF OUTLINE REQUISITE.**

**COPIES NOT LATER THAN JULY 15 TO**

**AUTHOR,** care of HAZELL, WATSON, & VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON.

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**SOLD EVERYWHERE.**

**Bulky Developers superseded by POWELL'S PYRO "DEVELOPOIDS,"**

1s. a bottle, which may be carried in the waistcoat pocket. Will develop six dozen plates.

Invaluable when travelling and at all times.

**Sole Maker—**

**T. H. POWELL, 116, Denmark Hill, London, S.E.**

**Sole Agents—**

**MARION & Co., 22 & 23, Soho Square, London, W.**

**N.B.**—T. H. POWELL makes a speciality of preparing Photographic Developers with the purest Chemicals and recrystallised salts. Country Amateurs, please note.

**SECOND EDITION IN THE PRESS.**

**Amateur Photographer's ANNUAL.**  
 Paper Covers, 1s.; Cloth Boards, 1s. 6d.

A FEW COPIES ONLY OF THE CLOTH EDITION LEFT.

# THE "AMATEUR PHOTOGRAPHER" COMPETITIONS, 1891.

The Dates given below are those upon which the Competitors' work must actually be received.

JUNE	1	...	Monthly Photographic	...	...	...	VILLAGE LIFE, FARMING, ETC.
"	17	...	Public Schools	...	...	...	Particulars to be announced.
"	30	...	* Photography at Home	...	...	...	Particulars to be announced.
JULY	1	...	Monthly Photographic	...	...	...	OUT-OF-DOOR FIGURE SUBJECTS, GROUPS, ETC.

All prizes will be in the form of Medals from the "AMATEUR PHOTOGRAPHER'S" several dies. No prize winner will be allowed to compete again for a Medal of the same value as that awarded him. The "AMATEUR PHOTOGRAPHER" Monthly Competitions are for the encouragement of beginners and those who have never entered a competition or exhibited their work. In the competitions marked with an asterisk, special or "progressive" Medals will be offered for competition by past prize winners.

Further Particulars, Entry Forms, etc., will be sent on receipt of stamped envelope.

Address: THE EDITOR, "AMATEUR PHOTOGRAPHER,"

1, CREED LANE, LONDON, E.C.

**NOTE.**—ALL APPLICATIONS TO BE ENDORSED, "COMPETITIONS."



## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.*

**OUR VIEWS.**—AMATEUR PHOTOGRAPHER'S Annual—Cardiff Photographic Society Exhibition—Photographs of Celebrities—Llanelli Amateur Photographic Society—Albany Institute Amateur Photographic Society—Fire at Lafayette's—Photographic Chart of the Heavens—Society for the South of Ireland—Corney Grain's New Sketch—Lantern Slides in Natural Colours.

**LEADER.**—Home Portraiture.

**COMMUNICATED ARTICLES.**—Two New Developers—Studies in Art for Photographers (Rev. F. C. Lambert)—Photographic References (Major Nott)—Painters and Photographers—Instantaneous Photography (W. J. Harrison)—Colour Sensitive Plates.

**LETTERS.**—What is an Amateur (An Old Amateur)—A Society for Guernsey (A. B. Carré)—Photographs of Celebrities (W. Gill)—Cardiff Examination and Lantern Slides (G. H. Bedford)—Glen Lyn, Lynmouth (Douglas A. Wright, R.N.).

**REVIEWS.**

**NOTES.**—Thursday Evenings at the Camera Club—Liverpool—Eos Collodio-chloride Paper.

**EXHIBITIONS.**—The Vienna Exhibition.

**HOLIDAY RESORTS AND PHOTOGRAPHIC HAUNTS.**—A Walk Through Cambridge with the Camera.

**AMATEUR PHOTOGRAPHER TOURIST INDEX.**

**APPARATUS.**—Loman's Reflex Camera.

**QUARTERLY EXAMINATIONS IN PHOTOGRAPHY.**

**SOCIETIES' MEETINGS.**—Belfast Y.M.C.A.—Brixton and Clapham—East Southsea—Enfield—Faversham—Graphic—Holborn—Japan—Lewisham—N. London—N. Middlesex—Richmond—Southport—Southport Social—Spen Valley—Staff. Potte.

THE success of the AMATEUR PHOTOGRAPHER'S Annual has been far beyond our expectation, the whole of the first edition being practically sold out. A second edition is now ready, and we would advise every photographer going on tour to take the ANNUAL with him, as it contains hundreds of wrinkles and dodges which will be found in no other book, and which will be of exceptional service when away from home.

In the present number we commence the publication of "Holiday Resorts and Photographic Haunts," and shall be glad of short articles upon any places not included in the "Tourist Index." The articles that have already appeared have been of immense assistance to our readers, and we hope many are preparing contributions for our columns.

THE Secretaries of the Cardiff Photographic Society send us a letter, published in another column, asking us to draw attention to the special inducements offered by their committee at the forthcoming exhibition to photographic

societies in the competition, Class 15, for the "best collection of not less than 50 slides illustrating a town or district. Prize, an optical lantern, value ten guineas; the slides to be accompanied by a lecture written or printed on cardboard; the winning slides to become the property of the Society." In their letter the Secretaries state that this prize is offered as an incentive to societies to form collections of slides, and that although the slides are to become the property of the Cardiff Society, it is proposed to loan them under certain conditions.

We certainly think that photographic societies might do much more for one another than they do at present. Our experience of loaning slides has been that we are able to give instruction and pleasure to thousands of people. The interchange of lantern slides by societies is one of the great works to be done, and although we deprecate anything like a "reading," we think each slide shown should have a few words of explanation and description given with them in addition to the usual lectural information.

The Secretaries also wish us to notify that they have made an arrangement with the Committee of the Glasgow Exhibition by which exhibitors desirous of competing at both exhibitions may have their pictures sent from Cardiff to Glasgow by through truck, carriage paid, to arrive at Glasgow in time for the judging on August 31st. This will be a very great assistance to many intending exhibitors.

SOME of our readers will possibly have something to say relative to Mr. Gill's letter upon "Photographs of Celebrities." We publish it as requested, and will only add that oftentimes it becomes a public duty that the possessor of a photograph of a "celebrity" should allow the use of it for the public good.

WE are pleased to note that a new society has been formed at Llanelli, with the title of the Llanelli Amateur Photographic Society. The Hon. Secretary is Mr. John Daniell, Dovedale House, Coleshill, Llanelli.

MR. ALBERT B. GEE, Hon. Sec. of the Albany Institute Amateur Photographic Society, writes to say that the premises at 345, Albany Road, Camberwell, have been entirely rebuilt, and that, in addition to a fine meeting room, there is a commodious dark-room which is being fitted with all the necessary accessories. The room is open to members in the evening from 6.30 to 10 o'clock. The subscription for non-members of the Institute is seven shillings per



annum, and the meeting nights are alternate Thursday evenings, at 8 o'clock. There is a good list of papers carrying the meetings up to 1892, and the Society is thriving and energetic, and will be found very useful by beginners.

A WRITER ("G. M.") in the *Speaker* is very much down on the artists who use photography as an assistant in their work. He says—

"I pass on to consider rapidly—and, I must admit, only cursively—a matter less abstruse and of more practical interest—namely, the habit—and a habit which is increasing among artists—to avail themselves of the assistance of photographs in their work. It will not be questioned that many artists of repute do use photographs to—well, to put it briefly, to save themselves trouble, expense, and, in some cases, to supplement defective education. But the influence of photography on art is so vast a subject, so multiple, so intricate, that I may do no more here than lift the very outer fringe. It is, however, clear to almost everybody who has thought about art at all, that the ever-changing colour and form of clouds, the complex variety (definite in its very indefiniteness) of every populous street, the evanescent delicacy of line and aerial effect that the most common and prosaic suburb presents in certain lights, are the very enchantment and despair of the artist; and likewise everyone who has for any short while reflected seriously on the problem of artistic work must know that the success of every evocative rendering of the exquisite externality of crowded or empty street, of tumult or calm in cloud-land, is the fruit of daily and hourly observation—observation filtered through years of thought, and then fortified again in observation of Nature. But such observation is the labour of a life; and he who undertakes it must be prepared to see his skin brown and blister in the shine, and feel his flesh pain him with icy chills in the biting north wind. The great landscape painters suffered for the intolerable desire of Art; they were content to forego the life of drawing-rooms and clubs, and live solitary lives in unceasing communion with Art and Nature. But artists in these days are afraid of catching cold, and impatient of long and protracted studentship. Everything must be made easy, comfortable, and expeditious; and so it comes to pass that many an artist seeks assistance from the camera. A moment, and it is done; no wet feet, no tiresome sojourn in the country when town is full of merry festivities, and, above all, hardly any failure—that is to say, no failure that the ordinary public can detect, nor, indeed, any failure that the artist's conscience will not get used to in time."

After referring to Mr. Gregory, Mr. Bartlett, and Mr. Menpes, who, he says, all use photography, he winds up by saying—

"In certain moments a backyard, with its pump and a child leaning to drink, will furnish sufficient motive for an exquisite picture; the atmosphere of the evening hour will endow it with melancholy and tenderness. But the insinuating poetry of light the camera is powerless to reproduce, and it cannot be imagined; Nature is parsimonious of this her greatest gift, surrendering it slowly, and only to those who love her best, and whose hearts are pure of mercenary thought."

WE observe that the premises of Messrs. Lafayette and Co., the well known Dublin photographers, were on the 21st inst. destroyed by a fire, which broke out in the ground floor of the premises, occupied by a druggist. We fear that many valuable negatives of celebrated persons must have been involved in the general destruction.

THE Commission for making the arrangements for a photographic chart of the heavens is getting on with its work, and the probability is that the necessary apparatus to secure uniform results will soon be supplied to all the observatories interested. To enable observers to pass in a uniform manner from the ninth to the eleventh magnitude (Argelander), a commission has been appointed to supply screens of absolutely identical webbing to all the observatories, which screens will diminish the brilliancy of a star by two magnitudes. Forty minutes is the standard time for exposure of the negatives destined to be used for the charts, the mean atmospheric conditions of Paris, and plates prepared by the firm of Lumière being taken as bases. The

metallic screens will be distributed shortly, and the names of Captain Abney and M. Cornu have been added to the Committee appointed to settle the details of the photographic processes.

MR. W. WILSON MERCER writes to us that he is desirous of starting a photographic society for the South of Ireland. The idea is a good one and worthy of support. Those who are desirous of joining should communicate with that gentleman, at the Leamy School, Limerick, whence they can obtain full information.

MR. CORNEY GRAIN's new musical sketch, which was produced on Monday last, is likely to be one of the "hits" of the season. Before coming to the main theme—"Dinners and Dinners"—Mr. Grain alludes to the modern craze for amateur photography. "The kodak," he explains, "is an instrument of torture found in every country house. When you least expect it, you hear the dreadful click which is driving the world mad." Mr. Grain comically describes his adventures at various social festivities, such as a picnic or a ball, and follows each experience with the catching refrain of—

"The kodak! the kodak!  
It took then and there!  
The kodak! the kodak!  
It takes me everywhere!  
\* \* \* \* \*  
The kodak here, the kodak there,  
It nearly makes you sick,  
Wherever you be—on land or sea—  
You hear that awful click  
Of the amateur photographer,  
Click! click! click!"

THE question of using the lantern stereoscopically has been frequently discussed, but recently Mr. Scott, of Weston-super-Mare, has invented a process by which he claims to get a lantern picture thrown on the screen in the natural colours of the object from which it was photographed. He starts on the assumption that there are four primary colours—green, red, blue, and violet, and acting on that assumption he takes simultaneously four photographs on an orthochromatic plate of  $3\frac{1}{4}$  in. square, each picture occupying one-fourth of the whole plate. These four photographs are taken by four lenses, fastened together into a group, and between each lens and the sensitive plate Mr. Scott puts a colour screen representing his four primaries. The exposures are simultaneous, but in order to obviate the difficulty that would arise from the fact that some of the colour screens would stop more actinic light than others, the lens apertures are varied in size so as to give as nearly as possible equal exposures. The resulting photograph is developed in the ordinary way, and a transparency is made from it, which when examined by transmitted light looks to be merely four little photographs of the same object, there being very slight apparent difference between them. To use these photographs in the lantern the colour screens have again to be used, each picture being projected by its own lens through the same colour screen that was used in taking the photograph; the four lenses also point to the same place, at which they come to a focus, making one picture only. The result is very striking and extraordinary; kaleidoscopic confusion of colour falling into instant and beautiful harmony as register of the pictures is approached. The subjects shown were varied in character, including landscapes, sunsets, shop windows, and advertising hoardings. The skies, with light fleecy clouds in broad daylight, or heavy masses of brilliant colour in the sunrises, were beautifully shown, and the coloured posting bills on a hoarding,



as affording a means of analysing the effect of each colour screen, were even more interesting than the landscapes or the more important subjects.

### HOME PORTRAITURE.

THERE are two great classes of magnesium flash light, both of which can be used for home portraiture, the one with the use of a mixture of magnesium powder and an explosive, the other by the use of magnesium blown through the flame of some burning lamp, etc. The choice between these two varieties may be decided, first by the convenience of the operator, second by price, third by absence of the products of combustion, and fourth by the chemical activity of the light. The following, extracted from a table by Eder, will help to decide the last point :—

THE SOURCE OF LIGHT (at a distance of 1 metre).	DURATION OF ACTION OF LIGHT.	CHEMICAL ACTIVITY.
1. Amyl acetate lamp (taken as unit) .....	1 sec.	1
2. Lime light .....	1 "	260
3. Gas light (Argand burner) .....	1 "	28
4. Magnesium ribbon (2½ ins. = .03 grain)...	7 "	11,400
5. Magnesium powder (.03 grain blown through a flame) .....	½ "	18,200
6. Explosive mixture with 1.5 grains magnesium, 10 grains chlorate of potash, and 10 grains perchlorate.....	⅓ " "	19,200
7. Explosive mixture as above (23 grains)	⅓ " "	200,000
8. " " " (60 " )	⅓ " "	500,000

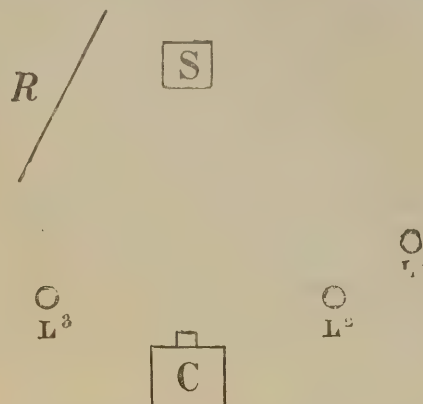
The amyl acetate lamp is taken as the standard, and, compared with our English standard of the normal candle, the amyl acetate lamp = 1, the English normal standard candle = 1.140.

From the above table it is obvious that an explosive mixture will give by far the greatest relative action, and this is in our power to control by the quantity we use; in fact, 23 grains of the mixture give as actinic a light as is obtained in a good studio on a fine day, and 60 grains gives more than twice as much light. With explosive mixtures there is, of course, always a danger, but this may be avoided by careful management. The separately powdered chemicals should be turned out on to a sheet of white paper, and then mixed with the hand or by the aid of a feather. The plain magnesium powder is more generally used now, we think, in England and also on the Continent, and, provided an intense and large flame surface is given, which should be chosen for its heat rather than its light-giving powers, it is possible to obtain very fine effects of lighting. There is, however, one important point which is too often forgotten, and that is that the relative activity of the light decreases as the square of the distance from the source of light, therefore if we place our sitter at a distance of three yards from the light we shall get considerably less illumination than at a distance of one yard.

The arrangement of the camera, sitter, and lights for flashlight work is shown in the following diagram. This is the arrangement adopted by Schirm, in his flashlight gallery at Berlin. The distance from the camera to the first flash lamp on the light side of sitter is from 1 to 1.5 metres, the distance from this lamp to the second lamp is 1 metre, the distance between these lamps and the sitter is from 2 to 2.5 metres for the first lamp and from 2 to 3 metres for the second, the distance between the camera and lamp on the shadow side is 1 metre, and the distance between this lamp and sitter from 2.5 to 3.5 metres. If necessary, a large white reflecting screen is placed on the shadow side of sitter. Each lamp is provided with an opaque screen on the side nearest the lens, so as to prevent any stray light entering the lens. All the lamps are con-

nected with one air-pump or indiarubber bellows, and are thus simultaneously fired, and about two grains of magnesium are projected through each flame.

For group work, more lamps are required, and four or even seven are necessary for large groups in an ordinary room. The lamps should be at least six feet above the ground, and we have obtained fine results with standing



figures with lamps eight feet high. The expense of fitting up such an installation is by no means great, provided the operator has a little constructive power and is handy with his tools, and good results can be obtained and good amusement given to both old and young in winter evenings or even now at this time of the year. Of the application of the flashlight in conjunction with daylight, we need hardly say much; arrange your sitter as you desire, and allow the shadow side of the face to be that illuminated by the daylight; that is to say, burn your magnesium ribbon or flash on the side of the sitter away from the light, and trust to the daylight for lighting up the shadow side. A little practice and ingenuity will soon enable one to turn out good results, and for children, babies, and such small fry, some such arrangement as this or the flashlight is absolutely necessary.

### TWO NEW DEVELOPERS.

ACCORDING to *Les Annales Photographiques*, M. A. Noël, a French chemist, has discovered a new developing agent, kinocyanine, whilst preparing kyanol or bleu de Paris. The new agent is stated to have a probable formula of  $C_{25}H_{12}C_{10}$ , and is in the form of an amorphous powder or ill-defined small crystals of a bluish violet with greyish tinge. It is soluble in water, alcohol, and ether, and the solutions are green and violet. A few drops of hydrochloric acid turns the solution a cherry red with a faint fluorescence. Sulphite and bisulphite of soda and sulphurous acid produce the same change of colour. The name kinocyanine has been given to it from its similarity to vegetable cyanine and quinone. It is a powerful reducer of the noble metals, silver, gold, and platinum, and is therefore a good developer for gelatino-bromide plates. It is as soft in effect as ferrous oxalate, as energetic as pyrogallol, less flat and slower than eikonogen, and less hard than hydroquinone; it is more energetic, however, and more stable and less expensive than any of these. The following is the formula given for the developer :—

Sodium sulphite .. .. .	50 grammes
Sodium hydrate .. .. .	1 gramme
Sodium carbonate .. .. .	140 grammes
Kinocyanine .. .. .	10 "
Distilled water .. .. .	1,000 c.cm.

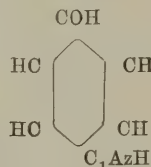
Dissolve and filter.

In *Le Moniteur de la Photographie*, MM. Auguste and Louis



Lumière give the results of their research on what would prove to be possible reducers of the nobler metals. Dr. Andresen, as is well known, has been trying the phenyldiamines with fairly successful results, and it occurred to MM. Lumière that the paramidophenols would act in the same way.

Paramidophenol may be represented by the following graphic formula:—



And it can be prepared by the reduction of paranitrophenol, or nitrosophenol, with tin and hydrochloric acid. It is obtained in the form of thin laminae, of which one part dissolves in ninety parts of water at 0 deg. C., the solubility increasing slightly with the rise of temperature. The aqueous solution oxidises rapidly in air, and much more rapidly in the presence of alkalies, and the solution becomes a deep violet-red colour.

The action of this agent in the process of developing is stated to be as follows: The water of the developer is decomposed, the paramidophenol appropriating the oxygen and forming quinonimide, and the hydrogen, reducing the silver bromide, gives hydrobromic acid, which combines with the alkaline base and produces a bromide. The following is the formula for the developer:—

Paramidophenol .. .. .	12 grammes
Sodium sulphite .. .. .	200 "
Carbonate of soda .. .. .	100 "
Distilled water .. .. .	1,000 c.cm.

Or,

Paramidophenol .. .. .	12 grammes
Sodium sulphite .. .. .	200 "
Lithium carbonate .. .. .	12 "
Distilled water .. .. .	1,000 c.cm.

The first formula gives excellent results for instantaneous work. The disadvantage of low solubility is one possessed by eikonogen and hydroquinone, and the new agent has the advantage of never staining the gelatine. The present price of paramidophenol, about 15s. per oz., is prohibitive, but with extended demand this would quickly fall.

## Letters to the Editor.

### WHAT IS AN AMATEUR?

SIR,—When any ailment breaks out periodically, an attempt is generally made to find out the cause, and as soon as possible remove it. Why cannot the same plan be adopted in the case of the ailment known as "What is an amateur photographer?" The cause is undoubtedly the distinction between professional and amateur; then let us get rid of it. It is a curious fact that in the higher walks of art this distinction is unknown. Who ever heard of an amateur painter, an amateur etcher, or an amateur engraver? and yet we have had a celebrated judge, a leading physician, barristers, and people well known in society exhibiting their pictures and works side by side with "professional" artists, aye, and striving for medals and other honours, without complaining that they are handicapped or desiring any distinction being made.

Considering the very great strides that pictorial photography has made in the last few years, and the claim that it now makes to be placed almost on a level with many of the other forms of pictorial art, I think the time has certainly arrived for dropping the word "amateur" altogether.—Yours, etc.,

AN OLD AMATEUR.

### A SOCIETY FOR GUERNSEY.

SIR,—At the request of many friends interested in photography, and now that the photographic season is getting in full swing, I am anxious to see whether it be not possible to form a camera club in Guernsey.

I mooted the foregoing proposition to a few amateurs about six months ago, which, however, fell through, no doubt owing to insufficient publicity being given to the idea.

As there is no society in existence in the island, and as the tourist season is at hand, I feel sanguine that if my idea be given publicity through the columns of your valuable journal, it will meet with general approval.

As soon as sufficient names are handed in, a meeting will be called to arrange matters, and in the meantime I shall be glad to hear from any to whom the idea commends itself.—I remain, yours truly,

46, Bordage Street, Guernsey,  
May 21, 1891.

A. B. CARRE.

\* \* \* \*

### PHOTOGRAPHS OF CELEBRITIES.

SIR,—I have for many years experienced difficulty in obtaining photographs of certain celebrities—many will not take the trouble of visiting the professional studio; others have objections to their photographs being published; and some are photographed and unknown to the photographer as being in demand by the public, and are, therefore, not in circulation. It has occurred to me that some of our celebrities may give sittings "at home" to their amateur relatives or visiting friends, and would not object to the issue of the photographs if likely to confer any benefit upon the said amateur. Without any desire to injure the professional photographer, why should not an amateur put into circulation a photograph not otherwise obtainable? I shall be pleased to answer any inquiries as to the value of any negatives for publication purposes—confining myself to portraits of personages noted in literary, legal, and scientific circles. Lovely landscapes, etc., are too numerous; life is short.

Since writing above, I have been reading your correspondence "What is an Amateur?" I am now afraid if you insert my letter it will be a bombshell thrown into the controversy. However, if an amateur does not wish to lose his status, can he not retain it by devoting the proceeds of his sales to some charity?—Yours, etc.,

217, Albany Street, N.W.

WM. GILL.

\* \* \* \*

### THE CARDIFF EXHIBITION AND LANTERN SLIDES.

SIR,—If we may trespass upon your valuable space we should like to explain the *raison d'être* of Class 15 at the forthcoming Cardiff Exhibition. Our object in offering an optical lantern for the best fifty slides of a town or district is merely an incentive to societies to form such collections, and although we stipulate that the winning slides shall become our property, they are intended to form a loan collection to circulate amongst the British and American societies.

Of course, with the present high standard of lantern slides, the whole of the work sent in should form most interesting collections, and by arrangement with the competing societies a valuable slide exchange should result, and here, we think, the utility of the scheme comes in. We trust, therefore, it will receive the cordial support of societies generally.—Yours truly,

G. H. BEDFORD,  
T. H. FAULKS,

Hon. Secs.

\* \* \* \*

### GLEN LYN, LYNNMOUTH.

SIR,—It may interest some of your numerous readers to know that in consequence of the death of the owner of Glen Lyn, Lynmouth, the place is let to Mr. Bevan, proprietor of the Lyndale Hotel, who makes a charge of 2s. 6d. for admission to the grounds with permission to photograph; the ordinary charge without a camera is sixpence.

As the valley of the West Lyn runs nearly north and south, about nine to ten o'clock is best for photographic purposes.—Faithfully yours,

May 25th, 1891.

DOUGLAS A. WRIGHT  
(Commander, R.N.)



## Studies in Art for Photographers.

By REV. F. C. LAMBERT, M.A.

### CHAPTER VIII.

#### INTERCHANGE.

MR. RUSKIN has used the term interchange to express a certain well-known and frequently used device which hitherto did not seem to have had any definite name. In a broad and general way, we may interpret this term to mean the taking of one part of a composition and exchanging for it something of a somewhat opposite character. Thus, suppose a picture to consist of a mountain, one side of which is a broad patch of light, the other of dark shadow.

Now, although we have here great simplicity and breadth, yet there is a tendency to insipidity, monotony, and a "plentiful lack" of interest. Suppose now we borrow from the dark side some patch of shade—say a tree, a rock, a thatched hut—and carry it into the region of light, at the same time compensating matters by carrying back some light patch—a haystack, a light-coloured cottage, etc.—into the dark part of the picture. Comparing the present state of affairs with the first condition (the roughest pencil sketch will suffice), we shall be led to note that the "interchanging" of parts has given interest, relieved the obtrusive monotony of arrangement, and, if done with due regard to certain other matters, the general breadth of the picture is not only undiminished but very probably emphasised.

It will be urged that it may be within the power of the painter to remove cottages at will, uproot trees, and slice down mountains, but that the photographer neither has nor desires these powers. Yet, be it observed that the latter can often make or mar a picture by the simple expedient of moving a few feet to the right or left, backward or forward, or by raising or lowering the camera, etc., and in that way cause the various objects to appear in different relative positions, according to the various points of view from which they are seen.

Now, in seeking to apply this well-recognised principle, although it seems hitherto to have escaped any very distinctive treatment, it is well to remember certain broad limitations. These are the natural offspring of other great principles, the first of them being the law of principality. This at once suggests that the parts interchanged should not be of importance equal to that of the principal focus of contrast—either as regards relative light (values), size, or interest. Otherwise a rival to the chief feature would be at once set up; in other words, the "highest light" must be the *highest*, *i.e.*, without any appreciable rival; so in like manner with the deepest dark. Again, both in the matter of size and form (and, with the painter, colour tint also), there must not be rivalry, but just the very opposite, *viz.*, harmony, order, subordination, unity, fitness, symmetry, continuity, balance. So also as regards the contrast, or theme-interest, there must not be rivalry but co-ordination; this last-named is of the utmost importance in all those pictures which are calculated to tell a tale.

The unobservant may be tempted to exclaim that this is all dreaming, theorising, etc., which finds no support in nature. Now, I would ask such a doubting Didymus to perform the following simple experiment. Let him take (into his back garden) any simple object, neither very light nor dark—a spade-handle or even a walking-stick—let him place it so that one-half of it comes against the sky and the other half against a dark object, say some dark roofing slates. Retiring now a few steps, let him note that where the object appears against the sky it seems decidedly dark, and where it appears against the slates quite light. Observe a tree against a hill-side and against the sky. Note how

the curly smoke appears blue against the dark thatch, but against the sky suddenly becomes brown. We may explain much of this by going back to the first principles of contrast, etc., and also the different results of reflected and transmitted light, etc.; but to explain it as you will, the *natural* fact remains, and the artist's chief business is to observe nature and then record his observations.

Every one is (or ought to be) familiar with the general pleasing effects of water reflections. Suppose we are once more among the hills, and the sun is setting behind a ruined building, the reflection of which scene is presented to us by an adjoining tarn. We may easily hide from view with the hand the reflected part of the picture, but we shall experience a feeling of loss on so doing. Now, observe carefully in such a case, how in the reflected picture the lights are not so light, and the darks are not so dark as they are in the original. Observe too how the pictorial interest is increased when we move our position so as to introduce a few foreground reeds, pebbles, etc. The strict repetition of form is thus relieved—still more so is it the case when a slight puff of wind disturbs the surface of the water. Thus may we study the varying degrees of variety. Now, observe any photograph in which the chief object of the worker seems to have been the representation of the most vivid reflection possible, the sort of thing that the proud possessor tells you "looks just as well one way up as the other." The effect is of course nothing short of disastrous; artistic suicide. The mental effect of this mechanical repetition can only be compared to the state of mind induced by the man who button-holes you and tells you as a new and original thing of his own, the very latest and best of your own witty composition that you had told him about a week ago.

To return to our pictures, or rather our *reflections*, the example above quoted shows us how easy it is to cut oneself when playing with edged tools of which we know not the proper use. The reflected image is a tool which in skilful hands has been made to produce the most beautiful work; while in the hands of others (woe be it said! chiefly photographers) it has also produced effects for which politeness forbids our seeking an appropriate name.

Any one who has followed me so far in this and the preceding papers of this series, will probably have observed that my object has not been simply or chiefly to set forth a number of rules, laws, or working guides, but rather to stimulate interest and attention towards the principles which seem to underlie these working rules. Now, although it may be easy to commit to memory a rule, yet the appropriate application of it in actual practice becomes mainly a matter of chance without some guiding principle—some "why and wherefore," so that the student knows how to treat each case on its individual and even slightly different merits.

It will also have been observed that these rules remind one of the old saw about fire and water being good servants but bad masters. This, because it is easy to carry them to a "vicious excess."

Now, in the case immediately before us the vicious excess of reflected repetition as an extreme case of interchange points the moral. Nor is the principle of moderate virtue far to seek. We find it supporting our greater laws of principality, subordination, harmony, and so on, as already mentioned. But further, it leads us towards, and in a certain sense acts as a connecting link between another closely related principle, *viz.*, that which is frequently referred to as repetition or echo. But our dangers in using it unwisely are not only that of rigid symmetry of form as in reflected images, but also its excess tends to spottiness, to diffusion of interest, to monotony in design, producing the impression of general



weakness, while its judicious application assists us ably in supporting the leading idea (this may be better considered under the head of repetition), in giving us many intermediate grades of light and dark, in leading up to the theme by degrees of interest, relieving monotony, and generally acting as a connecting link throughout the various parts of the picture.

## Photographic References.

By MAJOR J. FORTUNÉ NOTT.

### DEVELOPMENT.

(Continued from page 335.)

THE next class of developer calling for attention is the one in which hydroquinone plays the most prominent part. Some ten years ago Captain Abney drew the attention of photographers to this compound, but it is only within the last two or three years that it has gained the popularity which it now enjoys. It certainly possesses some advantages over pyrogallie acid, to which, however, it is very closely allied, but it also in a few respects compares unfavourably. The features that recommend it to photographers are as follows. It works in a clearer and slower manner than pyro, and therefore enables development to be performed without that staining of the fingers which is almost unavoidable with the other developers, and its slowness of action enables a greater degree of control to be exercised over the character of the negative being produced. The developing solution, although it gradually darkens, does not get muddy after the manner of pyrogallol, and its deterioration, if a preservative of sulphite of soda or metabisulphite of potash has originally been mixed with it, takes place in such a gradual manner that it is possible to use the same developer for a number of negatives. The only difference being discernible is that the action becomes slower and slower. It is, therefore, a very economical developer. But it is not wise to use hydroquinone in this manner if it can be avoided, although it is well to know that the power exists, for cases may arise now and again when it is a great convenience to be able to avail oneself of its capabilities in this direction. But it must be remembered that hydroquinone will work all right up to a certain point, and then appears to go bad all at once. Its effect, directly this stage has been reached, is one that is destructive to the negative, for the plate comes out of the bath somewhat stained, and clouded all over as though it had been partially fogged by light. The negative may begin to appear bright and clear and the detail be fine and distinct after the manner peculiar to the early stages of hydroquinone development, but all at once the clouding-over action takes place, and there is no salvation for it. We therefore repeat the advice, do not use the bath more than twice or thrice at the outside; in fact, we question whether it is wise to use it more than once without freshening it by throwing some of it away, and adding an equal quantity of fresh developer. It is not a good principle in development to be too economical with the developer, and this holds good with hydroquinone as well as with pyro.

Another good quality about hydroquinone is that it can be used for all kinds of work, negative making, lantern slides, bromide paper, and opals. It has therefore earned the title of the universal developer, and this is a quality which is of a distinct advantage when anyone dislikes to have that quantity of chemicals and bottles lying about which formerly were considered indispensably necessary for photography. Hydroquinone does undoubtedly produce

clear, fine detail, and is therefore a developer which possesses distinct advantages in lantern slide-making with the ordinary commercial dry plate. Its freedom from those staining qualities which the ferrous oxalate developer possesses, together with the slowness of its action, have endeared it to the majority of photographers who use bromide papers for printing or enlarging purposes. But the clearness of colour obtained by hydroquinone, although of great advantage in a lantern slide, where it confers beauty to the work, is not to be commended in negative-making, for when this clearness of glass is visible the printing quality is not nearly as good as it is in a negative where the greenish or yellow stain is visible which pyro and soda or pyro and ammonia nearly always produce. Another drawback about using hydroquinone for negative making lies in the fact that the same control over the character of the negative cannot be exerted, because altering the constituent parts of the developer does not appear to produce similar results, and again the tendency of negatives produced by hydroquinone is to err somewhat on the side of over-density. The controversy respecting the good and bad attributes of the various developers seems to have established the following points: For developing negatives use pyro and soda, for lantern slides and bromide paper use hydroquinone. A very good formula for hydroquinone is the following:—

#### HYDROQUINONE.

##### (A).

Hydroquinone, best quality	..	..	150 grs.
Sulphite of soda	..	..	440 "
Bromide of potassium	..	..	25 "
Water	..	..	to make total bulk 20 ozs.

##### (B).

Carbonate of soda (not bicarbonate)	..	900 grs.
Carbonate of potash	..	900 "
Water	..	.. to make 20 ozs.

For use, take equal parts of each. If it works too energetically or acts too intensely on the high lights, then it is as well to dilute the mixed developer with a little more water. But it must not be made too weak.

There are many other formulæ which different plate makers recommend, and they all appear to be equally good, but one or two of them may have special advantages when the developer has to be used for shutter work or in cases where the exposure has erred somewhat on the short side. Avoid using any of the hydroquinone developers in which ammonia is used as the alkali.

The developer which hydroquinone is fast supplanting is the one known as iron or ferrous oxalate. By many skilful workers it is the one they use and recommend for all classes of work. It does certainly yield beautiful negatives, but it does not appear capable of forcing out detail that is sluggish in making its appearance through under-exposure, in the same way that pyro and ammonia will do; or, at any rate, the process takes considerably longer time, an element which does not recommend it for this class of work. For lantern slide making and printing with bromide paper, it will always have its warm supporters.

The following is the formula which is in general use:—

#### POTASH.

Neutral oxalate of potash	..	..	10 ozs.
Warm water (distilled if possible)	..	..	30 "

#### IRON.

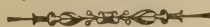
Ferrous sulphate (proto-sulphate of iron)	..	..	3 ozs.
Citric acid	..	..	60 grs.
Water	..	..	10 ozs.

For use, mix one part of iron to three of potash, and never fail to remember that the iron must be poured into the potash, and not the reverse. The effect of pouring the



potash solution into the iron one is to completely spoil the developer. Never omit the citric acid in the iron solution. The nearer both the stock solutions are to a saturated condition the better. If the plate being developed is a little over-exposed, the developer should be restrained with a few drops of the ordinary bromide of potassium solution, but it is not wise with a ferrous oxalate developer to use it heavily restrained. If an iron developer is being used upon an under-exposed plate a few drops (never by any chance more than fifteen to the ounce) of a solution of hypo-sulphite of soda, 10 grains to 4 drachms of water, can be added with a very beneficial effect, but the negative resulting, while possessing the necessary detail, will, in all probability, be lacking in density, which fact may have to be corrected by subsequent intensification.

(To be continued.)



## Painters and Photographs.

THE rapid extension which has of late taken place in the utilisation of the camera by those who, working with the brush, with justice lay claim to being the chief exponents of "high" art, requires at our hands some passing attention.

That photography is capable of rendering valuable aid to the disciples of painting is, of course, by no means a very recent or novel discovery. So long ago as when the "Elements of Drawing" was written, Ruskin expressly advised art-students to spend some time in carefully copying photographs. "If you cannot get a print from the Liber Studiorum," says he, "get a photograph. . . . You had better get a photograph even though you have a Liber print as well." There is no doubt that this advice has been in many cases followed. But it is not merely art-students who have profited by it; fully pledged artists have also done the like with a considerable amount of advantage to themselves and to the art of which they are votaries. There is, however, one thing they have until lately left undone, *i.e.*, failed to acknowledge their indebtedness to our art-science. They have in point of fact maintained a conspiracy of silence.

But within the last few months a great change has come over the spirit of the dream. The employment of the camera in collecting facts and impressions for the making of pictures has become so universal that it is impossible for painters to repudiate its claims for some share of credit as an important help to the artist in the correct and successful rendering of his conception or design.

It has indeed now become quite rare to find a painter who does not readily "own up" to making use of photographs of clouds, foregrounds, foliage, waves, transitory effects, and moving objects.

While such memoranda are employed in a strictly subsidiary fashion (and no good artist would dream of making other use of them), and are merely used in order to save time in the observation or verification and recording of either the items or the moods of nature, there can be no possible objection to such a practice. Quite the contrary, inasmuch as while a painter has a literal rescript of, say, a landscape before him in the shape of a photograph he cannot easily stray far from truth of form, nor be guilty of the glaring errors which we have all at times grieved at in the works of even our leading masters.

When, however, photography comes to be used as an adjunct to portrait painting, there is a good deal to be said against doing so; but as we are for the moment not greatly concerned as to what portrait painters or their patrons may think on the question, we shall not here discuss the ethics of this practice. Enough that on various pretexts, and very often not in the open manner in which landscape

painters now use photography, the limner of faces obtains prints of his sitters from which he corrects his drawing. The most usual excuse made is that the photograph is only wanted to get the folds of the drapery, or else to save the necessity for long or frequent sittings.

A more novel and further extension of the foregoing applications of photography is to use a lantern-slide made from a negative of the required subject. This is projected on to an ordinary canvas; by moving the lantern further or nearer, the image can be made to assume the exact size required; it is then painted or sketched in, the operation being somewhat akin to tracing. This utilisation of the optical lantern is much favoured by those who paint horses, dogs, and other animals, which, on account of the impossibility of getting them to remain in, or return to, a desired attitude, are very difficult to draw with reasonable accuracy. Another but a somewhat questionable application of photography to painting is to enlarge a negative on a specially sensitized canvas; this enlargement is then used as a ground-work, and eventually hidden by the paint which covers it. Portraits and landscapes so produced are sometimes palmed off as the sole and original work of the man who sells them. Such a transaction, it is hardly necessary to say, degrades all concerned in it, and as far as the buyer is concerned, is the more objectionable inasmuch as there is every reason to believe that the bastard work of art is not more enduring than are the promises of politicians.

From some enquiry which we have made amongst artists, it appears that, including portrait painters, they mostly work with a hand-camera (that is, where they do not buy their photographic studies from the dealers); and almost without exception, they do not seek to take "pictures," but limit themselves to obtaining a literal record of such objects or phases of nature as they desire to make a note of or think likely to be useful. There is one large and praiseworthy class who will hail the firm and recognised establishment of photography as an aid to painting with much rejoicing, *viz.*, the amateur artist. It is an open secret that the majority of those who belong to this category have always found their greatest difficulty in the *pons asinorum* of painting, *i.e.*, the accurate drawing of the objects included in the composition; but now, thanks to the professional showing the way, amateurs, without its being considered in any way *infra dig.*, may freely correct their errors of delineation by means of the so far faithful photograph. Some there are, no doubt, who may be sufficiently old-fashioned to reject with scorn the, to them, mortifying help of the sensitised film, just as some of our forefathers, who rejoiced in "the tantivy trot," refused to use "the hissing steam-pot." To all such we answer that most of the more striking works which will hang on the walls of the Royal Academy Exhibition owe much of their truth to the direct or indirect assistance of photography; and to the enterprising and ambitious amateur painter we say, "Get without delay, a camera, and learn how to use it, if you wish to compete on anything like equal terms with your professional brethren. And if you desire to become familiar with the *modus operandi* of photography, the quickest, cheapest, and far the most pleasant way is to join the nearest photographic society." We do not know of one in the three kingdoms which does not include several members ready and willing to show beginners how to begin, and there are now so many associations devoted to the elucidation of all which concerns our art-science scattered up and down the face of the country that he must be an unfortunate individual who is out of reach of one of them. To all such unlucky ones and others, the columns of our paper are always open, and we are at all times especially pleased to initiate a novice in the art and mystery of making sun-pictures.



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XVI.

LENSES CONSIDERED AND CLASSIFIED WITH RESPECT TO THEIR CAPABILITIES FOR INSTANTANEOUS WORK.

(Continued from page 334.)

III. *The Euryscope Lens.*—Two or three years ago, Messrs. Voigtlander brought out a lens which they named the "Euryscope" (similar lenses are now made by several other firms), and in which they attempted to combine the valuable light-admitting power of the portrait lens with certain qualities previously possessed only by lenses of the "symmetrical" or "rectilinear" type, presently to be described.

The largest aperture of the Euryscope lens is either

$f/6$ , or a little larger than this— $f/5.65$ . This is an extremely useful lens for instantaneous work. It is sufficiently small and light in the small size; and its large aperture is often useful.

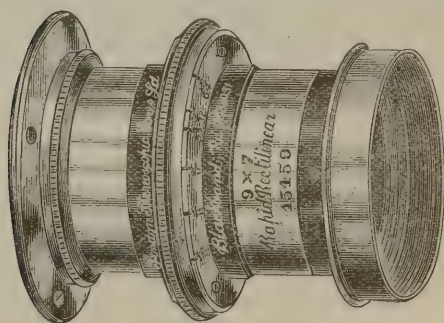


FIG. 2.

#### IV. "Rapid Rectilinear"

*Lenses.*—We come next to the most popular and generally useful lens of the present day—the "Rapid Rectilinear"

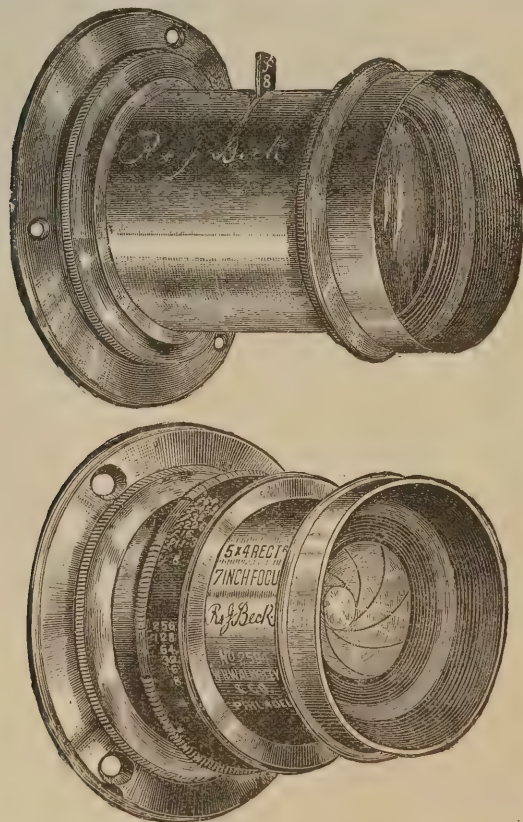


FIG. 3.

of Dallmeyer, or "Rapid Symmetrical" of Ross; made also a practically identical form by all or nearly all lens manu-

facturers, and known by many names (see figs. 2, 3, and 4). Most of these names begin with the word "rapid," indicating that the lens has a large aperture in proportion to its focal length, and their second name usually tells that they are capable of correctly reproducing vertical and horizontal straight lines. This lens appears to have been invented, independently, by Steinheil and by Dallmeyer about a quarter of a century ago. Its largest aperture is usually  $f/8$ ; that is, a lens of eight inches focus has its largest stop one inch in diameter. These lenses give excellent results in instantaneous work.

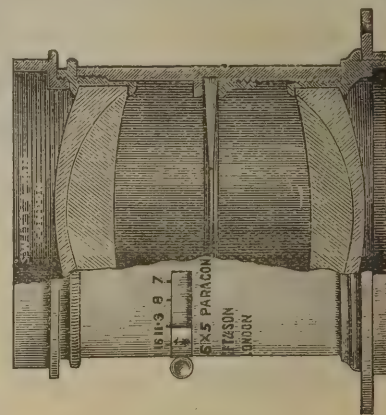


FIG. 4.

V. *Wide-angle Rectilinear Lenses.*—The great objection to the use of "wide-angle" lenses for instantaneous work is the fact that they necessarily work with a rather small aperture, so that they are *slow* lenses. Their largest stop usually equals  $f/16$ , so that the largest stop of a wide-angle rectilinear of eight inches focus is only half an inch in diameter. This class of lens (fig. 5) is wholly unsuited for instantaneous work.

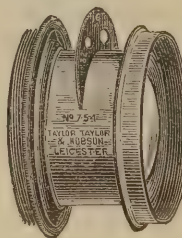


FIG. 5.

*Single and Double Lenses.*—All the lenses we have so far described may be called double, or "doublet," lenses. They consist of a pair of lenses, mounted one at each end of a tube, the diaphragm or stop being placed between them. Such lenses (as now made) combine to as great an extent as can be expected the qualities which we desire of a lens.

The principal points we require of a lens are: (1) rapidity, (2) truthful representation of object, (3) flatness of field, (4) equality of illumination, (5) achromatism, (6) agreement of the chemical and the visual foci, (7) depth of definition.

It is in the first and second of these points that the doublet lens excels; and for objects which contain straight lines, as houses, architectural subjects, street views, etc., such a lens is a necessity.

VI. *Single or "Landscape" Lenses.*—Single lenses (fig. 6) are inferior in this point of rectilinearity; they cause straight lines, which fall near the margins of the pictures they produce, to appear more or less curved. But a still greater objection to single lenses for instantaneous work is their want of rapidity; their largest aperture is usually  $f/16$ , though a "rapid" landscape lens (fig. 7) is now made which works at  $f/11$ .

VII. *A New Lens which is Rectilinear though Single.*—In Dallmeyer's "rectilinear landscape lens" we have a lens which, though apparently a single lens (it has an air-space in the centre), yet gives straight lines. It is an admirable lens for general work, and may be considered as linking together the two classes of "doublet" and

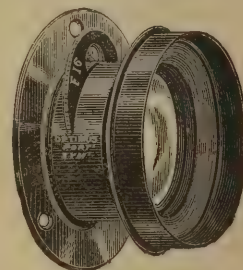


FIG. 6.



"single" lenses. The single lenses are often termed "landscape" lenses, because they are specially suited for landscape work. In landscapes the slight distortion towards the margin caused by a single lens is quite unnoticeable.

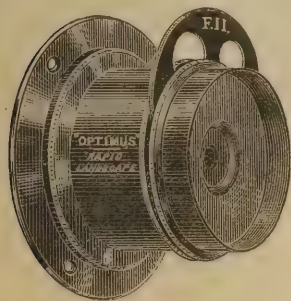


FIG. 7.

We have spoken of lenses as "single," but it must be understood that each "single" lens (or each component of a doublet lens) is itself made of two, or perhaps three lenses, cemented together by means of Canada balsam. This combination of pieces of flint and

of crown glass of varying curves and densities is necessary in order to secure that the image shall be achromatic (i.e., free from coloured fringes round the margin of the objects depicted), and that the chemical and visual rays shall be brought to one and the same focus.

*Summing up; Choice of Class of Lens for Instantaneous Work.*—A consideration of the qualities of the various classes of lenses which we have now described shows clearly enough that for general instantaneous work class III., the Euryscope lens, and class IV., the rapid rectilinear lens, is to be preferred above all others. In deciding between

these two classes of lenses we can only say that there is little or no difference; for though the Euryscope lens works at a larger aperture yet that aperture is seldom needed, and the lens is more expensive. We should therefore bracket these lenses as equally good for our purpose. The best qualities of each have been enhanced during the last year or two, by the introduction of new kinds of glass made at Jena, by which greater flatness of field is secured without the loss of other good properties.

But there is a special class of work for which single (landscape) and long-focus lenses answer admirably. This includes all work on the water, or from piers; such as yachting scenes, steamers, etc. Here we have plenty of light; while at the same time it is usually necessary to operate from a rather considerable distance. It is no secret that the most successful "marine" professionals prefer a long-focus landscape lens for such work.

The relative amount of light which passes through the largest stops of each of the seven types of lenses we have now described is shown in fig. 8. We see that the areas of the largest stops of the portrait lens and the W.A. Rectilinear are as 4 to 64, i.e., as 1 to 16; so that the necessary exposure with the latter lens is just sixteen times greater. Or, comparing the W.A. with the R.R., the relations are as 16 to 64 = 1 to 4; i.e., the exposure with the W.A. must be four times longer, because only one-fourth the light is admitted.

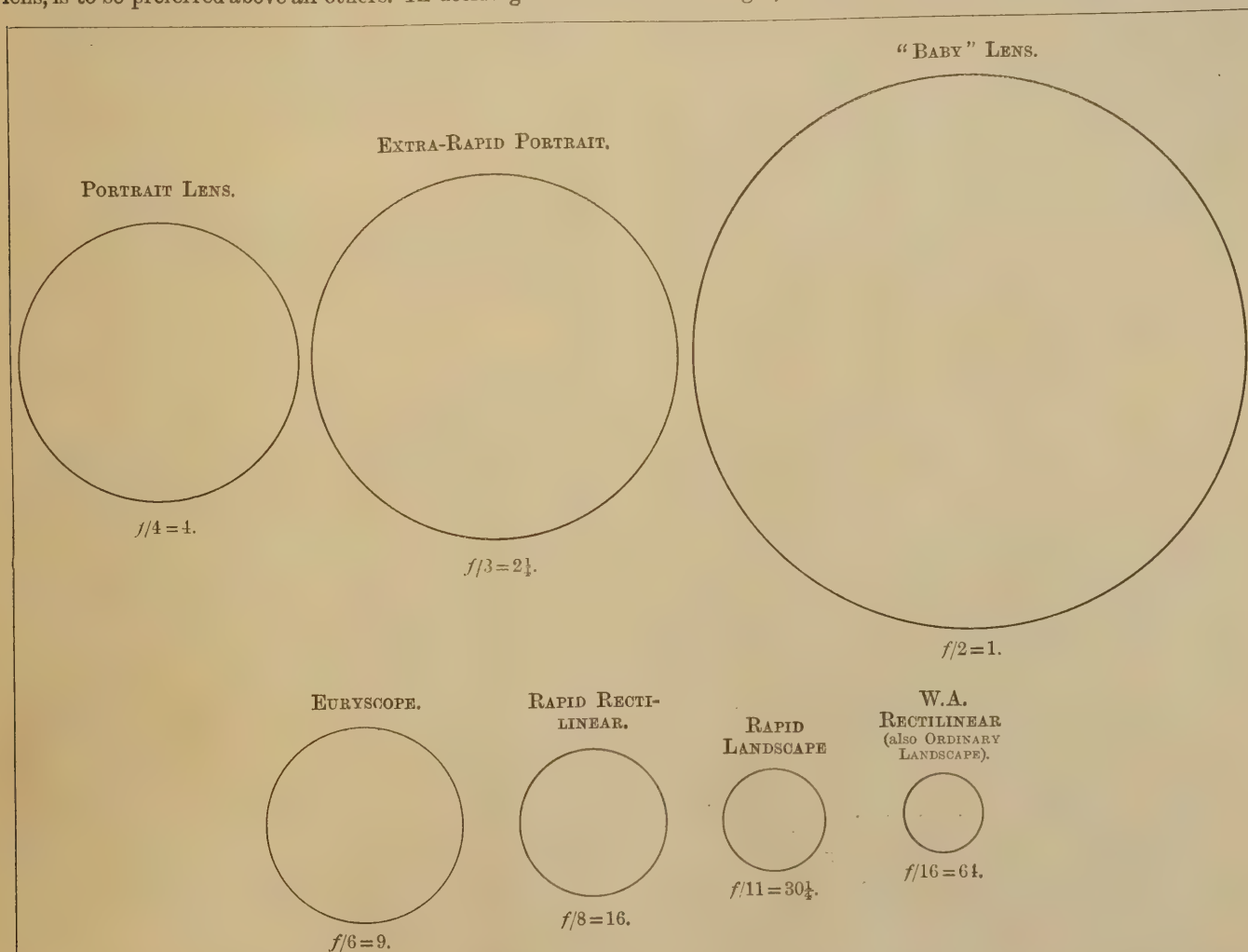


FIG. 8.

(The circles show the comparative sizes of the largest stops of seven different types of lenses, all of six inches focus. Taking the aperture of the "Baby" lens as unity, we see that the largest stop of a landscape lens is only one-sixty-fourth as large.)



## Colour-Sensitive Plates.

THE use of orthochromatic, isochromatic, orthoscopic, orthoskiagraphic, or colour-sensitive plates is gradually gaining ground in England, not only for special purposes, such as photo-micrography and copying pictures and other coloured objects, but also for outdoor landscape work and portraiture. Hitherto the dyes of the eosine group, fluorescein, uranin, eosin, erythrosin, rose-bengal, and phloxin have been used, and the application of these dyes in conjunction with an alkali is protected by a patent, and therefore individual workers are debarred from using the same without a licence from the English agents and manufacturers, Messrs. B. J. Edwards and Co. Some little time ago Waterhouse suggested the use of rhodamin, and this was tried and reported on by Bothamley at the last Photographic Convention. We have been trying the dye, and find that very good results are to be obtained with it. But before entering upon this we must call the attention of our readers to a most valuable contribution to the literature of orthochromatic photography from the pen of Dr. J. J. Acworth, F.I.C., F.C.S., which appears in the April number of the *Quarterly* on "The Relation between Absorption and Sensitiveness of Sensitised Plates," in which the following passage occurs:—

"*Rhodamine*.—I may here conveniently consider the sensitising and absorptive action of this dye; as it bears some distant relationship to the eosin series, being a dimethylamidophthalein. Rhodamine is easily soluble in water, the silver salt also being readily soluble, much more so than the corresponding eosine salt.

"A gelatine film stained with the dye shows an intense absorption band in the yellow-green, and, in comparison with that of eosin, more towards the less refrangible portion of the spectrum. The absorption begins at a little on the more refrangible side of D, rising at once to a maxim as far as D $\frac{1}{2}$ E, after which it descends first rapidly and afterwards slowly, and ends just before reaching F.

"For sensitising purposes I used amounts of the dye varying from .05 to 2 grams to every 2 grams AgBr employed, and with ammonia. Sensitiveness begins at C $\frac{1}{2}$ D, reaching a maximum equally on both sides of D. Beyond D it descends rapidly at first, thence gradually, and ends at F, showing but little sensitiveness beyond.

"The absorption of this emulsion begins at D $\frac{1}{2}$ E, rapidly rising to a maximum on both sides of D $\frac{1}{2}$ E, after which it decreases, rapidly at first, and gradually afterwards, ending at a little beyond F, and in the blue absorption again commences.

"With an emulsion containing less dye I got a very similar curve of sensitiveness and of absorption."

For our own experiments ordinary commercial plates were taken and bathed in a solution of rhodamin, 1 : 1,000, with 1 per cent. of ammonia, and then dried in the dark, and a solution was also used corresponding to the usual erythrosin silver sensitising bath; that is to say, an equal quantity of nitrate of silver and dye was used. On the addition of solution of silver nitrate to solution of rhodamin a faint cloudiness only is visible, which is immediately cleared up on the addition of ammonia. On adding silver nitrate to erythrosin, the dye is at once precipitated in the form of the so-called erythrosin silver, differing in this respect from rhodamin. Rhodamin gives a solution with a more decided crimson tinge than erythrosin, but possesses as fine, if not superior fluorescence even than eosin.

On testing the plates treated as above, the following results were obtained:—

(1) With a simple ammoniacal solution of rhodamin:

Sensitometer Number before Bathing.		Sensitometer Number after Bathing and Drying.
(a) 15	....	13
(b) 22	....	21
(c) 25	....	24

For testing the yellow sensitiveness a yellow screen was used between the luminous tablet and the number screen,

and for comparison an Edwards' isochromatic slow plate was used, and the following results obtained:—

Edwards' Slow.		Rhodamin Plate.
5	....	3-4

(2) With an ammoniacal solution of rhodamin and silver nitrate:

Sensitometer Number before Bathing.		Sensitometer Number after Bathing and Drying.
(a) 15	....	15
(b) 22	....	22
(c) 25	....	25

On testing for yellow sensitiveness, as described above no increase was noted.

There is decidedly a strong increase in yellow sensitiveness obtained by the use of rhodamin, though inferior to that obtained by the use of erythrosin. Nor does the addition of nitrate of silver to the bath appear to increase the yellow sensitiveness, as is the case with erythrosin, but, as was to be expected, the addition of silver increases the general sensitiveness. In all the above experiments a "vorbath" or preliminary bath of ammonia was used to soften the film and ensure equal absorption of the dye solution by the film.

The next important point is as to the keeping qualities of the plates treated with rhodamin and rhodamin and silver. A series of experiments were begun with various dyes, such as congo, benzo-purpurin, naphthol red, rhodamin, etc., on October 13th, 1890, and some of the plates were developed at once and others were developed on April 13th, 1891, six months after. The rhodamin-bathed plates now developed show no sign of fog, and even those bathed with rhodamin and silver work quite cleanly, though there is a faint sign of marginal fog. The action of rhodamin with some commercial plates seems to be to give very much cleaner working plates than others, and this could not be ascribed to the presence of iodide in the emulsion, because this was tested for in two cases and proved to be absent. Further experiments are of course required to prove the true worth of this dye, and we hope to be able to give shortly some results when working with the spectroscope.

It is to be regretted that we have no one in England who can or will undertake a work such as done by Eder in the examination of the new dyes which are constantly being discovered. One of the difficulties we have met with is to obtain the dyes; small quantities only are of course required, and small quantities of an enormous number of dyes, as no actual value can be placed upon experiments on one dye, the characteristic or principal dye of a series, as one member of a series may give far better results than the others, as is the case with erythrosin of the eosin group, and as we have also found to be the case with the benzo-purpurins.

To those of our readers desirous of entering this field of experiments we can heartily recommend the perusal of Dr. Acworth's paper, as it gives considerable information and throws a flood of light upon a point which has been frequently disputed over, and even denied, and also because the results there given may be used as stepping-stones or a ground-work on which to conduct other experiments. Thus from this paper we find the best method of determining the exact position of the sensitising action of the dye, and we must before commencing investigations of this kind come to a clear understanding as to the particular section of the spectrum for which we require a sensitiser. A cursory glance at the spectrum will show us that the most suitable dye is one which will sensitise from E to C, or more accurately perhaps from  $\delta$  to C, that is from the limit of the green, or even into the cyan blue through green and yellow to the limit of the orange on the red side. The sensitising action of erythrosin extends from E $\frac{1}{2}$ F to C $\frac{1}{2}$ D, with maxima and



minima of action between these limits, whilst from Dr. Acworth's experiments, rhodamin sensitises from  $C_{12}D$ , and then subsides slowly towards F. We have begun some experiments with primuline, but are unfortunately not in a position to give definite results at present.

## Reviews.

*Lehrbuch der Mikrophotographie von Dr. Richard Neuhaus.* Published by Harald Bruhn, Braunschweig. Price 8s.

In this work we have at once the most complete treatise yet published, and by the pen of one of the first of Continental workers in this branch of our science. The book is divided into eight parts. The first treats of the apparatus, the second of the objective and eye-piece, the third of the illuminant, the fourth of the illumination or lighting, the fifth of arrangements for special work, the sixth of the negative image, the seventh of the positive image, the eighth of the preparation, the importance of microphotography, and a list of published micro-photographs. The first sections treating of the necessary apparatus, etc., is comprehensive and complete, and many terms peculiar to microscopy are clearly and lucidly explained, a point that is of importance to those photographers anxious to take up this particular study, as a great many writers assume that photographers are thoroughly acquainted with the microscope and its parts. The part devoted to the consideration of the source of light is by no means the least valuable in the book. A succinct resumé of every light source recommended for photo-micrography and the arguments *pro* or *con.*, enables the reader to at once make his decision without personally finding out the advantages and disadvantages. In the section devoted to photographic manipulations the author is equally happy. Plainly worded, concise directions tell us how to set about the various operations, and we are not burdened with a plethora of formulæ, the author contenting himself with giving the particular processes, etc., which have proved successful in his hands. The author is in error, however, when he ascribes to Schultz-Sellack the discovery of orthochromatic photography, this being, as is well known, due to Professor H. W. Vogel. The work is well written and printed, and contains numerous diagrams embodied in the text, and some exquisite collotypes and photo-gravures of photo-micrographs as an appendix, and we can thoroughly recommend it alike to the novice as the more expert hand.

*Etude Complète sur le Développement et les Développeurs.* Société Générale d'Editions, 24, Boulevard St. Germain, Paris.

This handy little book, which is by M. L. Mathet, the editor of "Elementary Lessons in Photographic Chemistry," deals fairly exhaustively with the use of pyro, ferrous oxalate, hydroquinone, and eikonogen, and gives advice upon the choice of a developer for various purposes. There is a chapter devoted to the dark-room and its equipment, and the question of temperature, and its influence on the action of the developer, is treated upon. There is also a chapter giving the process of phototype. It is published in paper covers at two francs.

*Pantobibliion*: An International Bibliographical Review of the World's Scientific Literature. Edited by A. Kersha, C.E. Published in England by Swan, Sonnenschein, and Co., Paternoster Square. Monthly, 2s.

This work is the first issue of a new monthly which is intended shall contain a classified list of all the new books, published in the principal languages in all countries and on different subjects, also some critical articles on the leading works and a review of the current periodical literature. If M. Kersha can keep his subsequent numbers up to the standard of the one before us, his work will be of immense value to the editor of every paper, the scientific man, and above all to the librarian and investigator, and still more so if the subject matter in the three divisions is arranged alphabetically. At present one has considerable difficulty in finding any particular subject, as no sort of order is kept to. Except for this fault, the work is of great value, and considering the difficulties of printing simultaneously in Russian, French, English, and German, is exceptionally free from errors. Another feature which we should like to see in future numbers would be the price and publisher's address of the periodicals, as this would enable readers to order any special number which contained an article which might be of special interest to them.

## Thursday Evenings at the Camera Club.

BY ONE OF OUR STAFF.

MR. R. INWARDS presided at the weekly meeting on the 21st inst., when there was a good attendance to hear Dr. Acworth discourse on the "Flashlight." As was to be expected, a considerable part of the lecture was of a highly technical character, but the earlier part of it was extremely interesting, as it dealt with a visit to Professor Schirm, at Berlin. In commencing, the Doctor said that he believed that the flashlight might be found of great assistance in the production of artistic results, but until a few months ago he had but little idea as to what a splendid auxiliary it was for getting pictures as fine, if not finer, than by any other methods. In this country, however, the light seemed to be regarded very much as a toy, and artistic results from its use were, so far as he had seen, few and far between. There is likely to be a general agreement on that point, we think. That state of things did not exist on the Continent, for he had seen interesting and artistic pictures produced by it in plenty in Germany and elsewhere. Prof. Vogel introduced him to Prof. Schirm, who had fitted up a studio for using the flashlight only. The suite of rooms prepared were on the first floor, and were, in fact, ordinary dwelling rooms of large size. Of course, there was no top light, and there were no blinds or curtains of any description. There were reception and waiting rooms and two operating rooms, one somewhat larger than the other. The principal photographic accessories were the camera and its fittings, and the tubes—pneumatic and gas—connected with the flashlight burners, which were placed along the walls about 2 ft. below the ceiling. In the smaller room there were about ten lamps, and in the larger about fifteen, but only a few of the lamps were used at a time; usually only three or four, and they would suffice for groups of five persons on a plate 18 by 24 centimetres. Other German photographers had also adopted the light, some using it exclusively and some in conjunction with daylight. The doctor then expressed a wonder, which we have often felt ourselves, as to why in such a country as England, where the climate was so changeable, the light had not come into general use. The lamps were so easy to manipulate and so certain as to correct exposure. A gentleman at Breslau attended a fancy bazaar and took forty exposures by the light, and secured forty successful negatives. But Professor Schirm himself had done better than that, for he went to a fancy dress ball, and, between the hours of 9 p.m. and 5 a.m. secured no less than 218 exposures, many on orthochromatic plates with a screen, and all successful. The lamps the professor used are really Bunsen burners, so constructed that turning on the gas opened a valve and let the charge of magnesium powder fall so that it could be forced by the air pressure to the flame. As soon as one exposure was made, a hopper fed in another charge of the powder. Perfect combustion did not take place in the Bunsen burner, or when the mixed air and powder reached the flame it would cool it, therefore the supply of air to the burner was too small for perfect combustion. The shutter was worked pneumatically and electrically. When the pressure was given, it opened the shutter and forced the magnesium through the flame, and then before the whole light was utilised the shutter was closed electrically, thus considerably lessening the chance of movement during exposure. The professor had also invented several forms of portable lamps, each of which gave a different form of flame. In one, benzine ether was the igniting medium, and it had a high actinic power; no less than 1,300 flashes could be given with one charging of ether.

At this point the reader showed practically the working of the various lamps, and Mr. T. Chang exposed two plates during the explanation.

Continuing, the doctor said that the quantity of magnesium used in the flash was very small, from 3 to 5 centigrammes, and the cost of each flash was, therefore, about the fortieth of a penny. Professor Schirm also used the light for printing and copying, and the reader showed enlargements of photographs of the spectrum, which enlargements he had made in the tenth of a second by means of the light. He then went into the chemical value of the light as tested on ordinary and orthochromatic plates.

The proceedings terminated with a hearty vote of thanks to Dr. Acworth for his paper.



## Exhibitions.

### THE VIENNA EXHIBITION.

(From Our Special Correspondent.)

WE are enabled to give a few details of the Vienna Exhibition, which has been the subject of comment in our columns in the earlier part of the year. As our readers will doubtless remember, the main point which had to be observed in the selection of the pictures was artistic merit, and the judges were specially selected with this point in view.

The patron of the exhibition, Her Imperial and Royal Highness the Erzherzogin Maria Theresa, Infantin von Portugal, Geborenen Prinzessin von Braganza, sends four studies, which are perfect in technique and artistic skill. The Grand Duke Ferdinand of Tuscany exhibits also four mountain studies of great beauty. H.R.H. the Princess of Wales sends two frames full of small round instantaneous studies of very fine execution. Count Bardi has four fine French studies, the most praiseworthy being a market place, with pigeons feeding. H.I.H. Erzherzogin Stephanie sends a picture which could hardly be surpassed.

Count Hans Wilczek's picture of the midnight sun, taken in 1872, calls for special notice. Count Carl Cholek has a decided novelty, which is exciting much interest, namely, sitters photographed out of doors, with the sun full behind. Pictures are also shown by Counts Karl Brandis, Karl Esterhazy, Leo Mnischek, and Prince Heinrich Liechtenstein. Baron Stillfried depends upon some of his old laurels. Baron Albert Rothschild exhibits some magnificent portrait studies, which are only equalled in excellence of technique and artistic composition by the work of Baron Nathaniel Rothschild, amongst whose pictures "A View of Corfu" calls for special praise. Baroness Adolf Rothschild, of Paris, has sent some fine portrait studies in red chalk or Bartolozzi carbon.

The exhibition contains only two professional portraits, one a very striking study of "A Lady in White," by Oscar Suck, of Karlsruhe. Other striking works of Viennese workers are the landscape studies of Moriz Nahr, "A Snowstorm," by Max Putz, and the pictures of Baron Liebig, Bergheim and Schmidt's artistically interesting land studies, the latter of whom shows some fine interiors. Anton Einsle's landscapes are distinguished by some magnificent skies. H. Eckert, of Prague, has some striking instantaneous studies of laughing and crying children, which are, perhaps, only approached by the work of R. E. Festge, of Erfurt. Lieutenant Ludwig David's transparencies for window decoration are superb, and G. Schultz, of St. Petersburg, sends some fine winter landscapes.

England and America are distinguished by the excellence of their landscape exhibits. Emerson has sent no pictures, but some of his followers have sent some exhibits, notably Lyonel Clark's "Dedham Bridge" and "Dedham Lock," and George Davison's "Onion Garden," and Maskell's beautiful "Study of a Marsh." Ralph W. Robinson and Harry Tolley also must not be passed over. For genre pictures, H. P. Robinson and Miss Florence Harvey are capable exponents of the height to which this branch of artistic photography has been carried in England. The incomparable portrait of Professor Blackie by R. Faulkner cannot also be passed over without notice. American art is ably represented by J. E. Dumont's "Good Night," in which a man is shading a candle with his hand, an effect of lighting which found great favour in the seventeenth century, and which Mr. Dumont has ably carried out.

The older conservative school in photography is well represented by H. P. Robinson, with twenty pictures; J. Pattison Gibson, with his beautiful "Twilight;" Lyddell Sawyer, the most striking of whose pictures is undoubtedly No. 435, "On the Tyne," a perfect artistic rendering of a foggy and smoke-laden atmosphere. Fred Thurston, F. Worsley-Benison, and J. C. Douglas close the series of English and American artists, and many of our own workers will doubtless feel some incentive to further trials after artistic triumphs, when viewing this fairly representative collection of the works of the two leading schools of English photographic art.

The German school of amateurs is represented by some excellent work, notably that of Driesen and Heseckel, the latter of whom has followed closely in Emerson's footsteps and shows some charming results. Dr. A. de Lima's work is so well known here as to require but little praise—it is sufficient to say that it is quite equal to anything he has ever yet shown.

Italy comes well to the fore with the work of the Countess Loredana da Porto-Bonin, of Count Primoli-Bonaparte, Prince Ruffo de la Scellata and Vittorio Sella. To these schools we shall refer again, but the exhibition is undoubtedly a success and a fine show of 600 pictures is brought together selected from 4,000 sent in.

## Notes from the Liverpool Centre.

### LIVERPOOL'S FIRST '91 EXCURSION.

A HINT TO NORTHERN SOCIETIES.

(By our Special Commissioner.)

It is little use for photographers or anybody else grumbling about the weather. Growling will not cause the rain to cease, neither will it make the atmosphere warmer and the days brighter.

I am betrayed into this little homily because quite recently, as a special commissioner of the AMATEUR PHOTOGRAPHER, I journeyed into Wales with some twenty members of the Liverpool Amateur Photographic Association, the occasion being their first out-door excursion of the '91 season. The weather was certainly not of the finest, and several gentlemen of the party expressed themselves as not at all satisfied with travelling forty or fifty miles to encounter nothing—or very nearly nothing—but threatening gloom.

However, there we were, and we had to make the best of matters. And it so happened that a very good best it was.

Mr. Paul Lange, who was the leader of the expedition, of course, nothing can daunt or dishearten; and in this he was very ably backed by Mr. B. J. Sayce and other experienced operators. "Why," said the cheery Paul to a disconsolate group of youngsters who were bewailing the absence of the sun, "you may get better pictures on a day like this than if the sun were shining ever so brilliantly." I made a note of this, intending to interview Mr. Lange on the point one of these days. But to resume. I have seen some of the prints of studies taken during the excursion, and it must be conceded that they come out much better than one would expect. In all some 120 or 130 plates were exposed, and altogether, despite the "threatening gloom," the day was both profitable and enjoyable.

Our destination was Chirk, on the borders of Denbighshire and Shropshire—a district well worth visiting—and chiefly for the benefit of members of the northern societies who are prospecting round for excursion or holiday grounds, I am about to recount our experiences.

Chirk is within easy reach of Chester, frequent trains running between the two places from early morning until last thing at night. Arriving at Chirk, it is a good plan to send all unnecessary wraps and traps by a messenger to the comfortable Hand Hotel, about five minutes' walk from the railway station. Make this hotel your rendezvous; it is a good hostelry, cheap, and the management are accustomed to photographers. Having despatched your superfluities, strike up the hill to your right for Chirk Castle, a famous Welsh stronghold, dating back a thousand years or more and now the property of a Mr. Myddleton-Biddulph, who with his family are all photographers. Permission to photograph the interior of the castle may be obtained by writing for it, but the place on the whole does not lend itself much to good pictures. For photographic purposes it is perhaps too square, dark, and sombre, but good pictures may be had in the picture gallery, on the staircase, and one in the courtyard. The best exterior view is to be had from a lawn about a quarter of a mile from the castle, and to the left facing the principal entrance. Another picture is to be found in the entrance gate to the courtyard, but one of the best studies of all, is the entrance gate and lodge near the station. In the castle grounds, there are some fine tree studies and avenues which lend themselves readily and advantageously to stereoscopic work.

Having given the old retainer—who by the way, is a picture in himself—a small fee, and leaving the castle, retrace your steps towards the station again, near to which on your left you will see an entrance to the Llangollen Canal. By all means, walk a mile or so along the bank of this canal; you are sure of several very pretty scenes, the more so if you happen to meet with one of the numerous barges which ply on the waterway. None of the pictures taken by our party were more successful than those



taken here. Still more picturesque than the barges, perhaps, are the barge men, whose clothing, gait, etc., have quite a "year 1" appearance and add considerably to the canal pictures. A few coppers does the needful in each case.

By this time the operator will be in good trim for luncheon, and having finished that very necessary part of the proceedings—the air at Chirk is very appetising—he should take the road to the left from the Hand Hotel, first visiting the garden of the proprietor of the hotel, from the bottom of which on a clear day there is a panorama of magnificent scenery. Further down, on an incline from the garden, a mill affords an opportunity for a good shot, and then follows a hostelry and one or two cottages, an old bridge, and a narrow flowing river. Pursue the river a few steps to the left, and on the bank to the left side a very pretty study may be secured; a nice bend in the river, and the bushes and trees on either side contribute to a charming "bit." To the right of the bridge there is little or nothing worth taking, but ascending a height to the right overlooking the bridge, we come to another section of the Llangothlen Canal, and also have a good view of Chirk Viaduct and Church Aqueduct. There is nothing very tempting to the artistic eye in either of the latter features of the district, but as typical of the locality they are well worth taking. Crossing the aqueduct, the valley below offers one or two opportunities, and from this point of vantage, too, the viaduct is seen to best advantage. A train passing over gave an "instantaneous" worker in our party a chance for a good shot, but the light at the moment was hardly of the right kind for work.

At this point most of our party finished up, reserving one plate for a try at Chirk Church, which on the way back to the Hand Hotel peeps out at the end of a lane in inviting fashion. Tea brought an interesting excursion to a close. Upwards of 120 plates had been exposed, and, as before stated, with very excellent results. There are one or two other features of the neighbourhood including "Quinton," and a ducal estate which we did not visit, but which I learned permission could be got to photograph. Mr. Griffiths, the proprietor of the Hand Hotel, I have no doubt will gladly furnish all necessary information how to secure this.

Mr. Lange and the members of the Liverpool Society can be congratulated on the success of their first excursion of 1891. The trip need not cost more than 7s. 6d.

## Holiday Resorts and Photographic Haunts.

### A WALK THROUGH CAMBRIDGE WITH A CAMERA.

BY PERCY R. SALMON.

CAMBRIDGE, in my opinion, is a happy hunting ground for a camera man; here dozens of plates can be exposed, and he is never in want of a subject, and anyone spending a day or two in Cambridge will find it to be time well spent. In my daily walks I see plenty of hand-cameras in use; and anyone who has one should certainly bring it, as very good work can be done with it. On arriving at the station not much is seen of the town or colleges, but after about ten minutes' walk the visitor arrives at the new Roman Catholic church, which is a fine building, and the best view is from the S.E. It must not be taken with a lens embracing a very wide angle, or the resulting picture will be an eye-sore; it is best taken with an ordinary focus R.R. I have seen a picture of it taken with a W.A., and the tower stands like a giant, and the steeple seems to belong to a church further down the street. The church is always open, but the interior is too modern. The visitor ought now to turn to the left and go down Lensfield Road into Trumpington Street; at the corner is Hobson's Conduit, erected 1614. Proceeding farther down the street we come to Addenbroke's Hospital, which is a very plain building and not worth a plate. On the opposite side of the road is a very fine building, the Fitzwilliam Museum; the best view is obtained from the south. The next building is St. Peter's College, commonly called Peterhouse; it is the oldest foundation in Cambridge. The best views are the street front and the Second Court. The church adjoining is St. Mary's the Less, but it cannot be taken properly, owing to its cramped position. Opposite this is Pembroke College, and a plate may be exposed on the street

front; there is not much inside. The large church-like structure nearly opposite is the Pitt Press, and standing at the end of this we get a good view of St. Botolph's Church and Corpus Christi College. Corpus should not be passed without going in and looking at the Old Court, which is very picturesque, being all covered with ivy. A little further down the street, we get one of the grandest views in England, namely, King's College. Standing at the corner of Benet Street, we can get the gateway and chapel of King's, the University Library, Senate House, Caius College, and the large tower of St. John's Chapel all on one plate. Benet Street should not be passed without noticing one of the most perfect and interesting examples of Saxon architecture remaining in England, namely, St. Benet's Church, which must be taken with a W.A. lens. In the great court of King's, a capital view of a part of the chapel, gateway, and fountain can be obtained by standing at the south-west corner. The chapel itself is best taken from the west end, and by going on to the bridge, a good view of Clare College and bridge can be had. The University Church, St. Mary's, can be taken from the path leading to the library and also from the Market Place. Caius College stands next; the gateway is worth a plate. Going up Trinity Street, we pass one of the oldest and most antique houses in the town; it is now used as a bank. A little further up the street is Trinity College, the largest in Cambridge. The entrance is most striking, and if taken from the opposite side of the road, makes a fine picture. Proceeding under the gateway, we have before us, it is said, the most spacious quadrangle in the world, the contents of the whole area being 79,059 feet.

The cloisters, library, fountain, and avenue each are worthy of a plate. Its rival college, St. John's, stands next; the subjects in this college should be the street front, the new buildings, and the Bridge of Sighs; this bridge is best taken from the Old Bridge. St. John's College chapel is best taken from the road. The visitor has now before him the Round Church, or Church of the Holy Sepulchre. There are only four of these remaining in England; the best view is from the road. The principal colleges are now passed; turning down Sidney Street, Sidney Sussex College is passed, but a good view cannot be got, owing to the narrow street. Farther down the street we see Christ College; the front is worth a plate, also the large mulberry tree, said to have been planted by Milton, who was educated there, and the tree is always called after him. Emmanuel College comes next, of which the front is worth a plate; there is not anything particular inside, and so passing by we very soon come again to the new Roman Catholic Chapel, where we started. Should the visitor have time to take some interiors, I would suggest these:—King's chapel, Trinity dining hall, Trinity ante-chapel, and library. The interiors of the Round Church and Benet Church are also interesting.

A few more colleges might, perhaps, be mentioned, as the visitor would be sure to find something for his camera:—The colleges of Jesus, Queen's, St. Catharine's, Magdalene, Downing, Newnham and Selwyn, the Halls of Trinity and Ridley.

I think I have now said enough to enlighten an amateur as to the views there are to take; and anyone coming would reap a grand harvest. We have some very obliging professionals who are only too pleased to help an amateur.

In conclusion, I might say that plates of all makes and anything else an amateur will require, may be had at Beal and Son's, Sidney Street, and he will find the assistants most obliging in all information relating to photography. The same may be said of Mr. E. Field, Hill's Road.

Messrs. W. Butcher and Son, of 315, Regent Street, and Blackheath, have sent us one of their illustrated catalogues of photographic materials. The list is very complete, and is provided with a ribbon loop at the corner, so that it can be hung up in the dark-room for ready reference. Messrs. Butcher sell all kinds of apparatus made by the well known makers, together with chemicals, dry or made up in solution. They also quote prices for developing plates, printing, and mounting. The catalogue is a very useful book to have at hand.

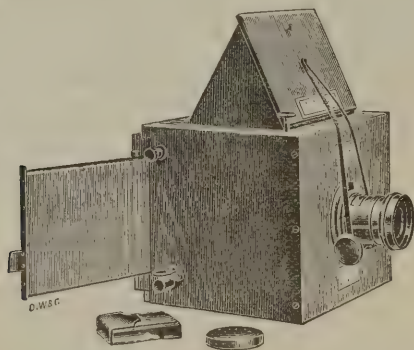
Eos Collodio-Chloride Paper is the name of a new printing-out paper made in Denmark, the agents in this country being Messrs. Parker and Co., 288, High Holborn. The paper prints quickly and tones admirably with any of the ordinary toning baths, although a special sulpho-cyanide bath is recommended. A bright surface is easily obtained, and details are well brought out.



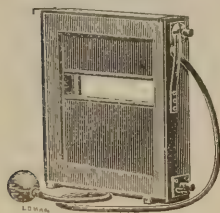
## Apparatus.

### LOMAN'S REFLEX CAMERA.

THIS camera is an extremely natty little instrument, and measures 5 by 5 by 6 ins., and weighs, with three dark slides, when filled, 4 lbs. The camera, as will be seen from the illustration, takes the form of a polished walnut box with the lens outside; and a focussing screen of full-size is let into the top, on which the image can be seen the full size and focussed by the rack and pinion fitted to the lens, which is of 5 ins. focus. The action of the camera is simple and very easy. Behind the lens is fitted a mirror at an angle of 45 degs., which projects the image on to the ground-glass, where it is focussed by the rack and pinion. As soon as the picture is seen on the ground-glass as we



desire to see it in the negative, the little brass push on the top is pressed smartly down; this raises the mirror, and as soon as this is raised to a point where it no longer cuts off any part of the image from the plate, the shutter is released and the plate exposed. The advantage of having a finder the full size is great, especially when one desires to turn out successful little pictures. The rack and pinion of the lens enables one to focus from five feet to infinity, or the lens may be worked at a fixed focus. The shutter is of the blind form, working just in front of the plate, and has an aperture of 1 inch; and an exposure from about half a second to the 250th of a second may be obtained by increasing the tension of a spring. One of these cameras was used all last summer by one of our staff with excellent results and gave every satisfaction, and from the one we have examined we consider it an excellent practical form of hand-camera. For those who prefer a more hidden apparatus, a special form is made enclosed in an outer case, and we should strongly advise intending purchasers to see this conveniently arranged apparatus.



Messrs. Loman and Co., the makers of the above camera, have also introduced a separate shutter on the principle of the curtain working close to the focal plane, which can be fitted to any camera, and be obtained to work up to the 1,000th of a second if desired. We shall have a further note on the principle involved in this shutter in a subsequent issue.

## Societies' Meetings.

**NOTE.**—In this column the Editor can of necessity only give a brief summary of the proceedings. Papers read before societies will appear in the PHOTOGRAPHIC REPORTER, and the Editor of the REPORTER will be glad to receive reports for insertion as early as possible after the meetings have been held.

**Belfast Y.M.C.A.**—On the 16th inst the first excursion of the season took place, a number of the members journeying by rail to the historic town of Antrim, en route for Shanes Castle, the residence of Lord O'Neill. Shortly after arrival a storm of hail and snow passed over the town (very unusual at this time of year). On reaching the demesne, brilliant sunshine succeeded, and cameras were soon at work on the old castle, picturesquely situated on the shores of Lough Neagh. After spending a few pleasant hours in the neighbourhood, a return was made to town by the six o'clock train, all agreeing that a visit at no distant date should be made to the same place, which abounds with many beautiful landscapes. The river Main,

town of Antrim, and Massereen Park, lying adjacent, had all to be passed over, owing to the want of time. A local excursion was also arranged, a few members visiting the valley of the Lagan, but the day being stormy proved very unfavourable for river scenery. On Monday, May 26th, the usual monthly meeting was held. The May print competition excited keen interest, a large number competing. First place was obtained by James Pollock with an excellent view, "A Bend of the Lagan;" J. McCleery second, with "The Village of Rostrevor;" and J. A. Hillas third, with "The Glen Whiteabbey." After the usual business was disposed of, the club's enlarging apparatus was brought into operation, and with the aid of the lime-light a number of very successful enlargements were turned out by the members.

**Brixton and Clapham.**—An ordinary meeting was held on the 21st inst., Dr. Reynolds in the chair. Mr. W. H. Powell having been suffering from the prevailing epidemic, had been unable to prepare his lecture on "Hand-camera Work," and it was accordingly postponed. A discussion having arisen as to Alpha paper, the Secretary read the paper by Mr. Howson on this subject in Messrs. Adams and Co.'s "Annual," which was listened to with much attention. Messrs. Hayward, Knights, Palmer, and Reeves were elected members of the club.

**East Southsea** having commenced the summer season, the first monthly meeting was held on the 19th inst. About forty prints were passed round, taken at the first outing, a fortnight ago, at Emsworth. It was decided by the members to visit Portchester the first week in June. Messrs. A. Burt and Guy were elected members of the Society.

**Enfield.**—The annual general meeting of the club was held on the 13th inst., the President, Mr. D. G. Pinkney in the chair. There was a good muster of members. The President, in moving the adoption of the annual report and balance-sheet, referred to the satisfactory position of the club, and considered that the members might reasonably congratulate themselves on the credit balance of £8 15s. on the first year's working of the club. Several members expressed the pleasure they had experienced and the benefit derived during the past season. The President and Secretary, and the Committee (with two exceptions, gentlemen who had left the neighbourhood) were then unanimously re-elected, and votes of thanks given for their past services. One new member was proposed, and it was arranged that the next field-day should be held at Leigh, near Southend, on Saturday, May 30th.

**Faversham.**—The usual monthly meeting of the above society was held on the 19th inst., Dr. Evers presiding, when the certificates gained at the late competition were distributed by the Chairman. Mr. W. C. Stunt (Vice-President), being unable to give his promised demonstration on account of illness, the Hon. Secretary Mr. Percy Dan, gave an impromptu on the same subject, which led to an interesting discussion. The society intend making the first summer excursion to the village of Chilham, about seven miles from Faversham, and, through the kindness of Colonel Hardy, will visit the castle and grounds in the neighbourhood.

**Graphic.**—A largely attended general meeting was held on the 4th inst., Mr. R. Murray (the President) in the chair. After the usual routine business, a programme of excursions for the ensuing session was drawn up, the outing on the 24th June to be the one subsidised by a grant from the Society's funds. It was resolved that each member must give a clear day's notice to the director of the several outings of his intention to be present. Six new members have been elected.

**Holborn.**—A large number of excellent slides were passed through the lantern at the last meeting, on the 22nd inst. The first were by Messrs. Arthur and Lionel Gowing, showing views of Dartmoor, France, Hampton, Hastings, Hampshire, Hertfordshire, Wimbledon, Sandgate, Ipswich, Yarmouth, Folkestone, and of animals in the Zoo. Among them were some excellent sunset scenes, including one entitled "Twilight on the Thames." These were followed by a small set by Mr. Herbert Thompson, and a large set by Mr. R. Plumbridge. Among the latter were some excellent flower studies, and one or two views taken in Australia. The evening was concluded with a large number of slides by Mr. S. T. Chang, including some of the Oxford and Cambridge Boat Race, and a number of views of France.

**Japan.**—At the April meeting Mr. W. K. Burton gave a demonstration of a modified silver printing process. Briefly put, the process consisted in making one solution of nitrate of silver, and another of "salt" (preferably chloride of ammonium), citric acid, carbonate of soda, and a little gelatine. The solutions are warmed and mixed, when an "emulsion" that is immediately ready for application to any surface that can be sensitised, results. The process of making the emulsion, sensitising the paper, and toning prints by Clark's platinum method, was shown. Specimens of finished prints were also shown. Mr. Burton said that the process had not yet been long enough in use to know whether it had any real advantages, but the possible advantages that he saw were that a single solution that would keep fairly well could be prepared in a few



minutes, and was at once applicable to any surface, whereas in all other silver printing-out processes, there were either two operations, that of salting and that of sensitising, or a washed emulsion which was comparatively troublesome to make, had to be used. The process was a cheap one. Mr. West thought the saving of trouble was not great. So far as he could see, the advantage of the process was that it made it possible to get a blacker colour—one more nearly approaching to an "engraving black" than by the ordinary process. Mr. Kajima made two exposures of the meeting by flash light. The proceedings ended with a vote of thanks to the Chairman. The hall was kindly lent to the society by Mr. O. Keil.

**Lewisham.**—A meeting was held on the 22nd inst., Mr. A. H. Miles, Vice-President, in the chair. The result of developing competition was made known, Mr. Hamerton being declared winner. Mr. Bedford Lemere, the judge, congratulated the members who competed on the success they had achieved, the plates being so well developed that it made the judging rather a difficult matter; the negative finally selected being one of six in which there was very little difference. Mr. Davis then gave his flash-light demonstration, showing his own improved apparatus, the advantages being that it required very little magnesium for each lamp, as it was practically all consumed. Any number of lamps can be employed, there being also an arrangement for giving extra top light, adjustable to various heights. After taking two portraits with the apparatus, Mr. Davis was heartily congratulated on its practical utility. Subject for next meeting, June 5th, "The Necessity of Care in all Photographic Operations," by Mr. M. Stodart.

**North London.**—At the meeting held on the 19th inst., the President (Mr. J. Traill Taylor) in the chair, Mr. Weir Brown explained his method of obtaining "Warm Tones in Bromide Prints by Uranium Toning." To obtain the best results he gave a fairly long exposure, and obtained, by slow development, a muddy brown coloured image. After fixing and washing, the print was immersed in a bath consisting of:—Nitrate of uranium, 4 grains; ferridcyanide of potassium, 4 grains; acetic acid, 90 minims; water, 8 ounces. The prints required to be slightly over-toned, as the subsequent washing tended to bring back the original colour. In fact, if continued long enough, the whole of the effect of the toning bath would be removed. Mr. Weir Brown passed round a number of specimen prints in illustration of his remarks. Mr. A. S. Newman read a paper on "High-speed Shutters," in which he pointed out the difficulties to be overcome in the construction of a shutter designed to work at a speed of over one-hundredth of a second, and explained how he had overcome these difficulties in the shutter which he exhibited. He also, by means of diagrams on the blackboard, showed a graphic method of calculating the effective exposure given by various types of shutters. Several questions relative to the subject were asked by members, and replied to. The next meeting will be held on Tuesday, June 2nd, when Mr. J. Traill Taylor will lecture on "Stereoscopic Cameras and Appliances."

**North Middlesex.**—A field-day was organised for Saturday, the 23rd inst., to Hale End and district, when a fair number of the members attended. On the 25th inst., Mr. F. Cherry in the chair, Mr. F. W. Cox gave a demonstration on "Kallitype." He said he had chosen his subject not because he was an advocate for this particular class of paper, but because he believed it would be new to a majority of the members. The paper was coated presumably with a solution of ferric oxalate; this on exposure to light is changed to ferrous oxalate, which reduces the silver salt in the developer and an image in metallic silver is the result. The paper both before and after exposure presents an almost identical appearance to platinumotype paper. Here samples were passed round for inspection. The paper is at least three times as sensitive as silver paper, and therefore all developing operations during daytime must be conducted in weak light. A good negative (not necessarily a hard one) will give best results in this as in other processes, and exposure should be stopped when there is a very faint indication of the densest parts of the negative having printed on the paper. Under-exposed prints will develop very slowly, and over-exposed ones come up mealy and muddy in appearance, and are liable to show stains and markings. In developing, the prints are floated face downwards upon the developer for a few seconds and then placed for a short time upon a piece of clean glass to gain density. Should bubbles appear, a touch with a camel-hair brush charged with the solution will stop any trouble in that direction. The prints are next immersed in clearing baths, and a final wash in water completes them prior to drying (the various formulæ were here given). The bichromate of potash is to give contrast, and a stock solution, 8 grains in 1 oz. of water, should be kept. A drop or two of this added to the developer when thin negatives are printed from will be found advantageous. The process is a cheap one to work, provided, of course, successful prints are obtained, as will be seen by the price list. Due allowance must be made, in judging density and brilliancy, for the wet state of the paper, and with the greatest care and cleanliness stains and markings will sometimes appear. The finished prints range from a bluish

black to a purple black in colour, and I see no reason why they should not be toned with uranium to a sepia colour to suit those who prefer a warm effect. The demonstrator then proceeded to develop the prints he had brought with him both by floating and by painting with the brush. Local development was resorted to, and those who had not previously seen the process worked expressed themselves much pleased with the results obtained. A discussion then ensued as to the exact nature of the metallic image obtained in this and in other processes, widely differing opinions being given. On Monday, June 8th, Mr. J. Traill Taylor will address the Society, when visitors will be welcome.

**Richmond.**—At the meeting on the 22nd inst. Mr. Cembrano presided, and an interesting and valuable demonstration of "Printing on Alpha paper" was given by Mr. J. Howson. After handing round specimens showing the great variety of tone obtainable on this paper, Mr. Howson proceeded to develop and tone several prints, producing red, brown, purple, and black tones, according to the length of time the prints were allowed to remain in the toning bath, time not admitting of the still more prolonged toning necessary to produce a blue. All details of the process were very lucidly explained as the demonstration proceeded, and at its close Mr. Howson replied to the queries of members on points of doubt or difficulty. Field days now take place once a fortnight, but so far have been unfortunately marred by the weather.

**Southport.**—The ordinary monthly meeting was held on the 14th inst., the President, Mr. E. Clough, in the chair. There was a good attendance to hear the annual address of the President. After briefly alluding to the services of the late Council and their efforts for the good of the Society, Mr. Clough drew attention to the new programme for the ensuing season, and appealed to the members to support the new council loyally, without which support and help no success could be expected in the future. Passing from local topics to those of more general interest, the address touched on the different events of interest during the past year—the reversal of the image, photography in colours, the vexed question of the relation of photography to art, and many other questions of interest. The value of the pursuit from the moral, intellectual, and physical point of view were dealt with, and the address concluded with an earnest exhortation to the members to work with such vigour and "go," that, to use a hackneyed phrase, their Society might be "second to none." The evening was filled up by a demonstration of the Platinotype process by the late President, Mr. Harper. Considerable discussion also took place with reference to excursions.

**Southport Social.**—The members, on the 15th inst. had a very enjoyable outing at the Botanic Gardens, Southport, when some very good pictures were obtained. Mr. Cross got a good negative of the members all armed ready for "a shot," and Mr. Kiddie exposed a plate on the members whilst at tea. On the whole, the afternoon was well spent, and future outings are being arranged. The previous meeting night Mr. Dunmore raised a discussion on the management of apparatus in the field, when a lengthy debate followed. On the 20th Mr. Cross gave a good demonstration on "Copying," which was appreciated by a good number of the members. We are glad to note the favourable progress of the club.

**Spenn Valley.**—The first annual meeting of this Society was held on the 12th inst. Dr. Farrow presided, and there was a good attendance of members. Mr. W. H. Wright, the Secretary, presented an interesting report, in which he stated that the Society was formed on January 21st, 1890. The past year had been one of pleasing experience and much active and successful work. The number of members was 38. The subscriptions had amounted to £37 10s., the total expenses to £31 3s. 6d., and there was now a balance standing to the credit of the Society £5 13s. 2½d. The Society's dark-room now offered great facilities and privileges for the furtherance of the art-science, and a lime-light enlarging apparatus had been purchased. The Society also possessed a small library of several standard works, annuals, and other periodicals, all of which had been supplied gratis. Fourteen monthly meetings had been held, and interesting papers had been read. Three excursions had been promoted, and a course of lessons in photographic chemistry had been given by the President. The report was unanimously adopted, as was also a financial statement presented by Mr. E. Smith, the Treasurer. The election of officers was then proceeded with. Dr. Farrow was re-elected President, and Mr. E. Smith Treasurer; and Mr. Eli Hirst was appointed Secretary. The following gentlemen were elected on the Council: Messrs. J. H. Jackson, J. Burnhill, A. H. Knowles, J. C. Phelon, W. Armitage, W. H. Wright, R. Smith, George Potts, and A. Cooper. Several vice-presidents were also elected. The first exhibition of members' work was held the same evening. There was a large display of prints in various processes, enlargements, negatives, and lantern slides, and the exhibition taken as a whole was a very creditable one. The members voted by ballot on the general excellence of the exhibits, and awards were made as follows: Prints, 1st, Mr. J. H. Jackson 2nd, Mr. A. H. Knowles; 3rd, Dr.



Farrow. Enlargements, 1st and 3rd, Mr. Knowles; 2nd, Mr. E. Smith. Negatives, 1st, Mr. W. H. Wright; 2nd, Mr. Knowles; 3rd, Mr. Burnhill. Slides, 1st, Dr. Farrow; 2nd, Mr. Jackson; 3rd, Mr. Knowles.

**Staff Potteries.**—At the monthly meeting on the 12th inst., Mr. R. S. Burgess (President) in the chair, Mr. E. B. Wain gave a demonstration on "Matt-Surface Papers," treating of their preparation, sensitising, toning with gold and platinum, etc. During the reading a number of p.ints on various papers were handed round. As Mr. Wain has made a special study of matt-surface papers, the members had the pleasure of hearing a thoroughly practical and very interesting paper. A vote of thanks was given Mr. Wain; he was also congratulated on his success in the last AMATEUR PHOTOGRAPHER competition.

## Quarterly Examinations in Photography.

**Question 19.**—Describe Warnock's sensitometer, and state your opinion of its reliability.

**ANSWER.**—It may be described as two printing frames fixed face to face with a shutter between. In the one is a negative covered with numbered squares, gradually increasing in density, while in the other is a phosphorescent tablet. The plate to be tested is placed behind the negative, and the tablet is excited by burning one inch of magnesium ribbon, and, after resting a minute (to allow the light from the tablet to become fairly constant), the shutter is withdrawn and the plate acted on through the negative for thirty seconds. The plate is then developed, and highest number visible gives the sensitometer number, each number being one-third more sensitive than the number next below it. The results between plates by the same makers are fairly reliable, but between those of different makers (probably made by different formulæ, and possibly sensitive to a different part of the spectrum) are not to be depended on. Further, as the aim of a photographer is the gradation of tone, and it is possible that a plate with a high sensitometer number may have a very short range of tone (the lower numbers being one uniform density), while another plate with a slightly lower number may have a long range, the latter plate would, in spite of the sensitometer, be the better. S. N.

**Question 20.**—What is an actinometer, and can the results of such an instrument be relied upon?

**ANSWER.**—Actinometers are instruments for measuring actinic force, and may be divided into two classes, according to the purpose for which they are used—

1st. For calculating exposures. These are a box with means for exposing a small piece of sensitive paper, the time required to darken to a certain tint being noted, thus giving the ratio of the time necessary. Either ordinary silver paper or bromide paper

dipped in nitrite of potassium, which being the same salt as the plate is preferable, is used, but not being the *actual time* of exposure (the conditions in this climate changing so quickly) the results can only be used as a guide.

2nd. For estimating the time required for printing in cases where there is little or no visible image, as platinotype and carbon processes. In this case a piece of silver paper is exposed under a glass plate covered with a series of squares or negatives increasing in density. Being exposed during the time printing is progressing, they register the light passing through a negative of similar density, and slight allowance being made for the different sensitive salts, they may be considered fairly correct.

**Question 21.**—Give a table showing the relative photographic activity of sunlight, lime, magnesium (ribbon and flash), gas, and petroleum.

**ANSWER.**—Sunlight varies so much, according to the altitude of the sun and the state of the atmosphere, while the different artificial lights depend so much on the way they are produced, that very little value can be placed on any table. Calculating, however, from experience obtained in enlarging, I find, using Mawson's bromide paper, *f*/22—

		Ratio.
Sunlight (bright), mid-day, summer, required about	10 sec.	1,200
" (dull) .. .. .	20 "	600
Limelight (oxy-spirit) .. .. .	6 min.	33
Electric (arc) .. .. .	3 "	66
Magnesium (ribbon) .. .. .	2 "	100
" (flash) .. .. .	"	"
Gas (argand) .. .. .	98 "	2
" (Bray's No. 5) .. .. .	150 "	1½
Petroleum (triple-wick lantern) .. .. .	50 "	4
" (circular burner) .. .. .	200 "	1

The time of the last four is obtained by calculation, the aperture I use with them being *f*/16.

In the case of daylight and magnesium a ground-glass diffuser is used, while with the other lights a condenser is employed, which may slightly alter the ratio. S. N.

**"Practical Amateur Photography,"** by C. C. VEVERS. Another edition of this useful little handbook has just reached us, and it is as complete as ever. It gives all the information necessary to the beginner, and is illustrated with cuts of the requisite apparatus, the greater part of which can be supplied from Mr. VEVERS well-known specialities.

**Mr. A. E. Western** writes:—"I want to thank you heartily for your 'Annual,' which has been of great assistance to me. The book is so beautifully complete, and therefore more useful than any other book on photography I have seen. I am sure it will have a great and permanent success."

## The Amateur Photographer's Tourist Index.

Back Numbers, Post Free, 3d.

THE "Tourist Index" gives references to back numbers of the AMATEUR PHOTOGRAPHER which contain Articles on "Holiday Resorts and Photographic Haunts," and in addition many other items of interest to the "Tourist Photographer" given in "Answers" or "Letters."

The Editor will be glad if ladies and gentlemen will kindly contribute short articles upon any places of photographic interest which may not be included in the following "Index":—

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Greek and Turkish ...	Articles (2) ...	{ June 21 and 28, '89	Oxford ...	Article ...	Sept. 19, '90	York ...	Article ...	June 27, '90
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Guernsey ...	Article ...	April 6, '88	Pagan (Upper Burma) ...	" ...	Aug. 23, '89	Youghal to Lismore ...	" ...	June 22, '88
Guildford ...	" ...	Aug. 3, '88	Paris... ..	2877 ...	July 26, '89	<i>Note.</i> —Most if not all of the above numbers of the AMATEUR PHOTOGRAPHER can be supplied. For every copy required, <i>three penny</i> stamps must be sent to Messrs. Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.		
Haddon Hall and Chats- worth ...	3934 ...	July 4, '90	Penzance ...	Article ...	11, '90			
Harrogate ...	Article ...	July 18, '90	Perranporth and New Quay ...	3947 ...	Mar. 13, '91	<b>Quarterly Examinations in Photography.</b>		
Harrow-on-the-Hill ...	" ...	July 22, '87	Permission to Photo- graph, Parks, etc. ...	4545 ...	May 30, '90			
Harwich ...	" ...	May 4, '88	Perth to Braemar ...	Article ...	May 30, '90	<b>QUESTIONS.</b>		
Hardanger, Norway ...	" ...	{ Aug. 23 and 30, '89	Photographing Abroad Letter... ..	" ...	Aug. 5, '87			
Hastings ...	2950 ...	Aug. 30, '89	Pinner ...	Article ...	Feb. 17, '88	25. Define the terms apochromatic, second- ary and tertiary spectrum, and ex- plain the two latter terms thoroughly.		
" ...	Article ...	June 8, '88	Porlock & Lynmouth ...	Article ...	Sept. 16, '87			
Havre ...	3783 ...	May 16, '90	Reading ...	" ...	July 26, '89	26. Explain the action of a coloured glass in printing out on silver paper.		
Holm Rook ...	Article ...	Aug. 1, '90	Rheidol Valley, N. Wales ...	" ...	Sept. 7, '88			
Holy Island ...	" ...	May 11, '88	Richmond ...	" ...	Mar. 21, '90	27. Explain the mechanical principles in- volved in the construction of a tripod, and the laws to be observed to obtain the greatest steadiness, etc.		
Hull ...	" ...	June 29, '88	Riviera ...	3435 ...	July 11, '90			
Hyères ...	" ...	Dec. 27, '89	Rochester & Chatham ...	3957 ...	Aug. 19, '87	(Latest Day for Answers—June 8th.)		
Hythe ...	" ...	July 5, '89	Romney Marsh ...	Article ...	Sept. 28, '88			
Ilfracombe ...	" ...	July 6, '88	Rosslyn & Hawthornden ...	" ...	July 12, '89	<b>RULES.</b>		
" ...	2593 ...	{ June 7 and 14, '89	Rotterdam & Amster- dam ...	3769 ...	May 9, '90			
Ilkley ...	Article ...	July 29, '87	Ryde ...	2605 ...	May 31, '89	1. Answers must be received on the morning of the Monday week following the publication of the question.		
" and Wharfedale ...	" ...	June 13, '90	Salop ...	4073 ...	Aug. 22, '90			
India, Apparatus for ...	4518 ...	Feb. 27, '90	Scarbrough ...	Article ...	19, '87	2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.		
Ingleton ...	Article ...	July 27, '88	Scotland ...	" ...	June 21 and 28, '89			
" and Settle ...	3909 ...	4, '90	Sevastopol ...	" ...	Aug. 15, '90	3. A <i>nom de plume</i> may be used, and must follow every answer, but in every case the full name and address must be written on the back.		
Ipswich ...	Article ...	May 4, '88	Severn Bridge ...	" ...	July 27, '88			
Isle of Man ...	" ...	Sept. 16, '87	Sidmouth ...	" ...	Sept. 9, '87	4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.		
" ...	3941 ...	July 4, '90	Sligo... ..	" ...	Aug. 19, '87			
" ...	Article ...	June 15, '88	Southsea ...	" ...	July 11, '90	5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photo- graphic matters and contributors to the photo- graphic journals will not be allowed to compete.		
Isle of Thanet ...	" ...	Aug. 17, '88	S. West of England ...	3951 ...	April 3, '91			
Italy... ..	4263 ...	Oct. 31, '90	" ...	4639 ...	Feb. 13, '91	NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners all other communications must be addressed to the Editor.		
Kelso ...	Article ...	May 30, '90	South Africa ...	4486 ...	July 5, '89			
" ...	3037 ...	Oct. 4, '89	Southampton ...	2724 ...	Sept. 21, '88	Marks will be given for all answers, and when pos- sible, the three best answers will be published. Three prizes will be awarded at the end of each quarter. All communications to be addressed:— "EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER, 1, CREED LANE, LONDON, E.C.		
Kendal ...	4223 ...	10, '90	South Devon ...	Article ...	Mar. 28, '90			
Killarney & Glengariffe ...	Article ...	Aug. 9, '89	" ...	3578 ...	Aug. 2, '89			
Killarney ...	3998 ...	July 18, '90	South Coast ...	Article ...	28, '88			
Lake District ...	Article ...	July 22, '87	St. Ives ...	" ...	June 8, '88			
" ...	" ...	June 7, '89	St. Leonards & Hastings ...	" ...	June 6, '90			
" ...	2833 ...	July 26, '89	St. Margaret's Bay ...	" ...	June 28, '89			
Leamington ...	Article ...	June 29, '87	Sunder'd & Edinbro' ...	2720 ...	July 4, '90			
Leicester ...	" ...	Aug. 24, '88	Surrey ...	3919 ...	July 19, '89			
Lismore ...	" ...	June 22, '88	Sussex ...	2796 ...	May 30, '90			
Lincoln, Ely, and Stam- ford ...	2729 ...	July 5, '89	Swansea ...	3830 ...	June 27, '90			
Llanfairfechan ...	2887 ...	Aug. 9, '89	Switzerland ...	Article ...	Mar. 9 and 16, '88			
Littlehampton ...	Article ...	July 19, '89	" ...	Letters ...	Aug. 29, '90			
" ...	" ...	Aug. 1, '90	" ...	4566 ...	July 18, '90			
Llangollen ...	" ...	Aug. 10, '88	" ...	4071 ...	26, '89			
" ...	" ...	2, '89	" ...	3993 ...	July 20, '88			
Loch Lomond ...	2735 ...	July 12, '89	Tenby ...	Article ...	" ...			
Lowestoft ...	Article ...	Aug. 31, '88	Thames, Lower ...	Article ...	" ...			
Ludlow ...	" ...	24, '88	" ...	" ...	" ...			
Lydbrook, nr. Ross... ..	2678 ...	June 14, '89	" ...	" ...	" ...			



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4708. **Hand-Camera.**—I wish to purchase a good hand-camera, quarter-plate. The negative must be good enough for enlarging up to at least 10 by 12, and for making lantern slides. Can anyone recommend a make? Is the Talmer good enough for these purposes? I shall be much obliged for information. **M. A.**

4709. **Central Africa.**—Could any reader inform me (1) the best films to use in Central Africa (Uganda), (2) the best developer to take, (3) the best paper and printing process for use out there? Please remember that lightness of materials is of very great importance.—**C. M. S.**

4710. **Focussing Screen.**—Can anyone inform me if it is possible to alter an ordinary glass focussing screen so that celluloid can be used in place of the glass, and also if the celluloid can be made to lie flat?—**CANADA.**

4711. **Photinus Oil.**—Can any of your readers who have tried this oil for the optical lantern corroborate the advantages claimed for it, viz., that it has neither "smell nor smoke"?—**J. R.**

4712. **Retouching.**—Will someone kindly tell me if it is necessary to use the medium in all cases when retouching, say, small spots on face? Could they not be removed by marking on the spot with retouching pencil? Also which is the best way to apply the medium? Would a soft hair brush do, or must it be poured on in the same manner as when varnishing a plate?—**G. H. E.**

4713. **Stickpaste.**—Could any reader of the **AMATEUR PHOTOGRAPHER** inform me if there is any chemical of any description in stickpaste which will do harm to prints mounted with it; if so, what chemical, and which is the best mountant now used for mounting prints? A hint will oblige.—**W. H. ELLIS.**

4714. **India.**—I am going to India shortly, and intend taking my camera. Would any reader who has practised photography there kindly tell me what quantity of chemicals to take out with me? Any hints will be gratefully received.—**E.** (address with Editor.)

4715. **Optical Contact.**—Can any amateur friend inform me how to bring prints in contact with glass?—**M. H. S.**

4716. **Reducing.**—I am about to make a simple reducing apparatus for lantern-slide making (from half-plate size), wherewith to use my ordinary Wray's R.R. lens of  $\frac{3}{4}$  in. focus. At what distance from negative must I fix my lens (say to diaphragm slot), and what length of camera do I require from thence to the lantern plate?—**ROBIN.**

4717. **Switzerland.**—Will anyone kindly give me an idea of exposure on the Lake of Lucerne (Brunnen for head-quarters) during June and July? I use Eastman's roller films, and in England find Wormald's tables a great help. Would they be of any use abroad, and what would the average difference of time be—half, quarter?—**T. T. S.**

4718. **Hire-Purchase.**—Can anyone tell me where I can obtain Lancaster's and Underwood's cameras on the hire-purchase system?—**JOAN.**

4719. **Rough Surface on Negative.**—Most of my negatives, on drying, are found to have a rough, uneven surface and a white, powdery matter nearly all over the film. What is the cause of this, and how can it best be remedied?—**L. S. S.**

4720. **Hand-Camera.**—Can Lancaster's quarter-plate Instantograph with shutter be used as hand-camera? If it is possible, how is it to be done? Are lens and shutter quick enough? Any hints will greatly oblige.—**SWISS.**

4721. **Instantograph Lens.**—When taking some high buildings with Lancaster's quarter-plate Instantograph, about half an inch along the top of the negative was fogged on several plates. Does the lens not cover the plate, when using the rising front to its full extent?—**SWISS.**

4722. **Toning Bath.**—When toning with following bath—Borax,  $\frac{1}{2}$  oz.; gold, 2 drms.; hot water, 18 oz.—I only succeeded in getting about twenty prints toned within four hours; then the bath almost refused to act. I added  $\frac{1}{2}$  drm. more gold solution; that toned a few prints more, but exceedingly slowly. Would anybody kindly help me? I kept the bath tepid, but the gold precipitated, nevertheless, quickly.—**SWISS.**

4723. **Tenby.**—I propose making a short stay in Tenby, South Wales, during the coming summer, and shall be glad to learn, through the **AMATEUR PHOTOGRAPHER**, any places of interest in the neighbourhood, and, if possible, a few notes as to light (say during August and September).—**W. J. CABLE.**

4724. **Metal Slides.**—Will someone who has used Tylar's metal slides kindly say whether he can recommend them as in all respects satisfactory?—**E. H. K.**

4725. **Bromide Paper.**—What is the proper way to expose bromide paper? Hitherto I have always done it this way: Place a piece in the printing frame in the dark-room, cover the frame over with a coat or a piece of cloth, then take it to the nearest gas burner, pull off the coat, and expose. Directly the exposure time is up, replace the coat, take back to the dark-room, then take out the paper and develop. It will be seen from this that there is no gas burner in my dark-room. I cannot possibly put one there. **A. GROVES.**

4728. **Exposure.**—What exposure is necessary in a diffused light for a group, using Dallmeyer's triple achromatic lens with medium stop?—**KENDAL.**

## QUERIES UNANSWERED.

April 24.—No. 4638.

May 1.—Nos. 4647, 4648, 4653, 4654, 4655, 4657, 4658, 4659.

" 8.—Nos. 4668, 4671, 4674, 4675.

" 15.—Nos. 4679, 4686, 4688.

" 22.—Nos. 4692, 4694, 4698, 4699, 4705.

## ANSWERS.

4667. **Testing Shutters.**—It is just this way. You make a white mark on the rim of the wheel and then turn it till it has acquired a speed of one revolution per second. You then expose, and on development you will find that there is a black line on the rim of the wheel (corresponding to the white mark aforesaid), which will, of course, vary in length according to the length of the exposure. Now see what proportion of a complete revolution the white mark moved through during exposure as indicated by the length of the black mark on the negative. The fraction representing that proportion will indicate the speed of the shutter. For instance, if the black mark on the negative is one-eighth the circumference of the wheel, then it is plain that the white mark made one-eighth of a complete revolution during the exposure and, therefore, the speed of the shutter is estimated as one-eighth of a second.—**H. LEACH.**

4680. **Westminster Abbey.**—I am sorry I missed this query last week and, if not too late will reply now. The entrance to Henry VII. chapel, looking east, being very dark, required an exposure of 45 minutes on a bright day in April; plate, Ilford ordinary; stop,  $f/32$ ; and the lighter portions were not overdone, in fact, you can hardly over-expose here where you have any part in deep shadow. Plates must of course be backed. I may just remark that the usual card to make sketches will not allow you to take photographs of the interior of the Abbey, for this special permission has to be obtained from the Dean. The newly restored north front, from which the scaffolding has recently been removed, is, however, well worth a visit, and this can, of course, be taken without any special permit.—**EDYLLION.**

4682. **Silly Islands.**—Mr. T. Ford should write to J. C. Tonkin, bookseller, Hugh Street, St. Mary's, Scilly, for a copy of Tonkin's "Guide Book to the Silly Islands," price 1s., postage 1d. It contains much information and a good map. Hotels: Tregarthen's is a comfortable house, apt to be overcrowded during season (July to September.) Holgate's Hugh House Hotel is larger, but not so select. Other and cheaper accommodation is available. The coast scenery is very good. Boating costs from 10s. a day and is, practically, the only form of amusement. The sub-tropical gardens of the lord proprietor on Treco Island are unique and well worth seeing. The best view of the archipelago is obtained from the Semaphore Tower (coastguard station) on St. Mary's. I do not know of a dark-room nearer

than Penzance. A trustworthy hand-camera, worked on a firm tripod, should give good results. Focussing-cloths are likely to give trouble in the perpetual driving wind.—**BEDFORDSHIRE.**

4683. **The Dukeries.**—Workshop would be the most central point at which to stay. My agent, Mr. Haslam, would give permission to photograph Olmberg, and probably it could be obtained also for Thoresby and Welbeck from the respective agents. Besides these places many charming views could be obtained in Sherwood Forest; and Roche Abbey, a beautiful ruin, is about fifteen miles from Workshop. Any further information would be given by Mr. Booth, photographer, Workshop.—**NEWCASTLE.**

4684. **Septia Tones.**—I should think "Duplex" could obtain very good septia-toned prints from the Septiatype paper which can be purchased at any photographer's at the following prices, viz., quarter-plate, 7d.; half-plate, 1s. 3d.; cabinet, 1s. per dozen sheets. This paper requires a very little time and trouble. There are only three processes, viz., (1) Soak the print for ten minutes in cold water, (2) then put the print for a few minutes (10) in a bath of hyposulphite of soda (saturated solution), (3) then again put the print in water for 20 minutes, so as to be sure there is no soda left in the print. The prints can then be dried by either blotting, hanging up, or by the fire. This paper requires a little longer exposure than the albumenised papers.—**W. H. ELLIS.**

4684. **Septia Tones.**—I think "Duplex" would find, for septia tones, the following suit him very well, and which I have used with great success myself, and with certainty. Take a print of a negative on thick bromide paper, and develop the same with either hydroquinone or ferrous oxalate up to nearly the required density, then clear wash, etc., as usual. I then take Wood's uranium intensifier; to 1 oz. of this add  $\frac{1}{2}$  oz. of water, then lay the bromide face up in this, when the print will very rapidly change to a beautiful septia; in fact, I have some thus treated that can scarcely be detected from septia paintings. Great care, however, is required to take out the prints just as the required tint has appeared, as, if allowed to go on, a reddish hue will be the result. The prints should then be washed until the whites are pure, and then allowed to dry.—**F. YOUNG.**

4690. **Omnigraph.**—This is very fair at the price, and, doubtless, good work can be done, but it is best to pay a little more and get a better one.—**ERKO.**

4691. **Toning Bath.**—Evidently you do not print deep enough. Try:

Tungstate soda	...	...	...	30 gr.
Water	...	...	...	8 oz.
Gold	...	...	...	1 drm.

Dissolve soda in 3 oz. boiling water, add gold, and after five minutes, rest of water. Use at once.—**ERKO.**

4693. **Covering for Hand-Camera.**—What "J. W. W." wants is not leather, I think, but a kind of American cloth, which can be obtained at No. 18, Tottenham Court Road, for 1s. 3d. a yard.—**S. M.**

4693. **Covering for Hand-Camera.**—You might get morocco or other leather suitable for your purpose at a saddler's or shoemaker's, or try Drew, the bag and portmanteau maker. I should say you could make a good job of it by means of glue and a squeegee.—**PONTO.**

4695. **Lens.**—No difference whatever. The lens would cover, but it is best to stop down a trifle.—**ERKO.**

4696. **Antwerp.**—The best and cheapest house "A Rather Nervous One" could go to is Parker's Temperance Hotel, 10, Rue de la Digue, Antwerp. The charge is 5s. a day. He will have no difficulty in making himself understood, as it is an English family which keeps the Hotel.—**BELGICA.**

4696. **Antwerp.**—"A Rather Nervous One" cannot do better than stay at the Hotel de Hollande. It is close to the quay. The son of the proprietor, Mr. Joseph Stroobants, speaks English well, and will be most happy to give him any information about places worth photographing, etc. There is no difficulty about the customs. I spent about ten days at that hotel, and was most comfortable. My expenses were about 10 francs a day. English money is taken at the hotel. "A Rather Nervous One" can mention my name if he likes.—**W. J. BARTON.**

4696. **Antwerp.**—Can recommend the Hotel Vieille Tour, opposite the Cathedral. Proprietor used to be at Critterion, and speaks English. His name is Blaens Vanden Eynde. Terms very reasonable. Money is same as the French decimal coinage. Van Neck speaks English and his man does, so that you could easily understand. You can photograph anywhere pretty well in Belgium just the same as in England. The customs house is easily got through. They ask you if you have anything to declare—"rien a declarer"—and you pass through. They are very polite, quite a contrast to our customs officials. English spoken nearly everywhere in Antwerp.—**ERKO.**

4696. **Antwerp.**—In company with my wife and a relative I visited Antwerp last July. We stayed with Mrs. Lewis, Avenue du Commerce, for two days and were well pleased. Her charges are moderate



—3s. for bed and breakfast. The house is thoroughly clean and comfortable, and as she is English, this is a great convenience to anyone, who speaks nothing else. "A Rather Nervous One" will find her address in the Continental time table of the Great Eastern Railway Company (sent post free). I may say that this was part of a pleasant six days spent in Holland and Belgium, and the entire cost of the trip, everything included, was only six pounds. As regards the language, no difficulty will be experienced on this point, as at most of the public places English is spoken. Get a good guide book, read up before going, and I can guarantee your enquirer an enjoyable holiday. If I had time and space I would gladly give a more detailed account, but if "A Rather Nervous One" desires any further particulars I shall be glad to send them. Editor has my address.—DARWEN.

4697. **Views, Where to Get.**—"N. M. H." I should think, could find six, if not more, good half-plate views, without walking a very long distance, at Highgate and Hampstead (including Parliament Hill Fields, from which a very good view can be obtained of both Highgate and Hampstead and Hampstead Heath), or at Pinner, or in any of the parks and gardens (provided he or she has a licence to take photographic views in Royal parks and gardens, which can be obtained from H. W. Primrose, Esq., H.M. Officer of Works, Whitehall Palace, S.W., available for six months).—W. H. ELLIS.

4697. **Views, Where to Get.**—Richmond, Kingston, Hampton Court, Hampstead, Epping Forest, Croham Hurst, Osterham, Carshalton, Pengehurst Castle and village, Cuckfield, Hayward's Heath, Sevenoaks, and Knockholt Beeches, with Knole Park, would perhaps suit.—PONTRO.

4700. **Pickard's Exposure Meter.**—Very good, works with Ilford's (slow), Fry (ditto), Mawson's Castle. All good plates. Preference is given by the writer to Wormald's exposure tables, as nearly all exposure meters are troublesome and indefinite.—EIKO.

4701. **Shutter.**—With a very weak band made by tying the ends of a piece of elastic pulled out of an old elastic garter, I have obtained an exposure of one-third second. In this case the elastic was stretched from the knob on arm to the central pivot, and then pulled down over the knob of shutter, so that the elastic only acts during about one quarter of the revolution.—PONTRO.

4702. **Focal Length.**—The focal length of Lancaster's quarter Instantograph lens is  $\frac{1}{2}$  ins. The largest aperture,  $f/10$ .—PONTRO.

4702. **Focal Length.**—Focus something over 30 ft. away, and measure distance from lens (if single) to focussing screen and you obtain your focal length.—EIKO.

4703. **Developer, Eikonogen.**—Try Beach's for bromide work, which is:

A.	
Eikonogen	... 1 drm. 4 gr.
Sulphite soda	... 2 " 8 "
Water	... 4 oz.

Dissolve soda first.

B.	
Carb. potash	... 168 gr.
Water	... 1 oz.

For use, to make 4 oz.: Take 3 oz. A, to which add  $\frac{1}{2}$  drm. B and 1 oz. water. For ordinary work use Warnerke's, which is:

Sulphite soda...	... 40 parts.
Distilled boiling water	... 100 "
Eikonogen	... 20 "
Caustic potash	... 20 "

For use, 1 of above to 3 of water.—EIKO.

4704. **Channel Islands.**—If S. L. Coulthurst will communicate with me (address with Editor) I shall be most happy to give him the benefit of my experience, collected in a life's sojourn in the Channel Islands.—SARNIA.

4704. **Channel Islands.**—Jersey, the largest, should be visited first; Guernsey on the return home in the usual order. Excursion cart runs to all parts of the Islands, and it will be better to inspect the route lists when you are there. De Faye, Photographic Chemist, 21, David Place, St. Helier, Jersey, has two splendid dark-rooms, and also large selection of plates, paper, and chemicals. Colliette, Chemist, of Guernsey, is also a photographic chemist.—C. G. ELLETT.

4706. **Permission to Photograph.**—It is rather impossible to say how many plates you can expose—that depends on your taste. To make sure of your passes for parks, write as follows: Royal parks, etc., H. W. Primrose, H.M. Office of Works, Whitehall, S.W.; parks and spaces under County Council, H. de la Hooke, Spring Gardens, W.C.; Wanstead and Epping Forest, Sir John B. Monckton, Guildhall, E.C. For Kew Gardens you must write to the Director, Kew Gardens.—EIKO.

4707. **Lewis, Island of.**—There is no "Island of Lewis." Lewis, or the Lews, is the northern portion of the Long Island, Harris being the southern. I should decidedly advise "Q" to take with him everything he will need. The finest scenery is in Harris, but there is no lack of interesting subjects anywhere.—DUPLEX.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

J. RIDGWAY.—Use 80 gr. of sodium hydrate. We have inserted your query this week.

W. T. BARTON.—The borax bath will keep better than the acetate.

Gold chloride	... 1 gr.
Borax	... 20 "
Water	... 10 oz.

The tube of gold should be broken in a bottle containing 15 drm. of distilled water, and kept in the dark. It can then be used for mixing any bath. In the acetate bath the gold should be neutralised with a pinch of chalk. One fixing bath is sufficient, made up of hypo, 2 oz.; water, 1 pint. You washed the prints much too long; one hour would have been quite enough.

O. A. K.—The only qualification is respectability, love of the art, and election by the club. The nearest would be the Holborn Camera Club (Secretary, J. E. Smith, 97, Tableday Road, Tufnell Park). There are meetings for beginners.

W. T. BARTON.—The camera you mention is a very good one, and would meet the points you mention. There is also the Reflex, which uses dark-slides.

G. L. BARKER.—The Chronolux is a very good shutter, and will, we should think, fully answer your purpose.

W. S. M.—We are afraid we cannot help you. There must be some misunderstanding at the other end. We have forwarded your letter to the maker.

W. WILSON MERCER.—We sympathise with you, but fear nothing can be done beyond waiting until the order is completed. We note the other point in your letter.

LOOK PLEASANT.—D would, perhaps, be the best. We should say the aperture in the shutter would be too small. We should recommend an Underwood or other blind shutter, working in front of the lens.

J. E. GARTSIDE.—We shall be pleased to tell you what it will cover if you will send it to us.

PEBBLEDIDGE.—Hackney Phot. Soc.; Phot. Soc. of Great Britain; the Holborn Camera Club; and we believe the West London Phot. Soc.

E. D.—We should recommend either 2 or 3; there is little if any difference between them.

W. E. K.—It is to be obtained of Mr. Cusworth, Leytonstone.

W. H. WHITTARD.—We hope it will be published next week; the medals are being engraved, and will be sent as soon as received.

THOS. H. BISHOP.—We know nothing better than Mr. Chapman's formula given in the answers to correspondents, in the number for March 13th. We should not use a smaller stop than  $f/8$ . The negative arrived in numerous pieces, but as far as we can judge it is under-developed.

E. A. P.—A carbon enlargement on opal would be as satisfactory a method as you could adopt, and it is quite permanent. It has also the advantage of offering a choice of colour.

INVENTION.—We do not know of any book on the subject you refer to.

J. C. J.—We should say most certainly. Several of the photographs exhibited last year had previously been entered in the AMATEUR PHOTOGRAPHER competitions.

FRITHIOF.—Thank you for MS. "Grange-over-Sands." Which we shall use shortly.

B. WHITBROW.—The MS. "Winchester" will be published in due course. Many thanks for the same.

A. H. BLAKE.—Your photographs are well up to competition standard, and Nos. 2, 3, and 4 show much care in composition. In No. 1, the two straight lines of the old man and his staff on one side, and the upright post of the foot bridge are stiff and formal. We return the prints, and are much pleased with them. The best is No. 4, which is an admirable picture.

T. H. P. H.—Lancaster's Omnigraph will answer your purpose admirably, is well made, and capital value for the money.

R. S. TREILIAN.—Well advanced; date will be fixed very shortly.

S. JAMES.—None of the photographic journals gave lengthy reports upon the photographs exhibited. Entry forms have been sent you.

W. GILL.—We publish your letter in another column.

G. BUTTERWORTH.—Many thanks for your letter. We shall hope to see some of your work at an early date.

PATIENTLY WAITING.—The treatment you have received is very annoying, but we make a rule not to take any action in such matters. Send your complaint to the Photographic Dealers and Manufacturers' Association, 7, Southampton Row, W.C. The Society was formed to redress the wrongs of buyer and seller, we believe.

H. S. W.—Your measurements are wrong somewhere, we think. Measure all your diaphragm apertures and work them out, or else send us up the lens.

ASPIRANT.—(1) This sitter is evidently suffering from influenza; the image is too low on the plate. (2) The vignetting is very poor, lighting fair. (3) The negative is slightly over intense in the high lights and much too strong a reflector has been used. (4) Good; though this might be improved by a little yellow matt varnish on the back of the negative so as to lighten the shadow of the nose, in fact the whole of this side might be lightened a little. (5) A good portrait spoilt by the background being too light; a deeper tinted grey would have given a fine result. You would get a better lighting by placing your sitter more at an angle with the window; full-face lighting is hardly ever conducive to anything but flatness.

A. BEGINNER.—For ordinary work we should choose either 4 or six, then 3, 5, 2, 1; for instantaneous, 2 or 5, then 8, 4, 3, 1.

AMATEUR.—The probable cause of the yellowness of the print is the long washing prior to toning, which may be obviated by washing in salt and water, and then using fresh salt and water after toning and making your fixing bath 3 oz. to the pint, and adding  $\frac{1}{2}$  oz. of carbonate of soda to the pint. It is never advisable to keep sensitised paper in a closed receptacle with any chemicals.

GOAT.—(1) Out of focus, fogged in developing. (2) Fogged in developing. (3) Out of focus, not printed deep enough. (4) Out of focus, fogged in developing. (5) Over-exposed, out of focus, fogged in developing. (6) Ditto. (7) Ditto. (8) Under developed, under printed. (9) Under printed, over toned. (10) Group not sharp all over, under printed, and over-toned. 7, 8, 9, and 10 are mounted on common cardboard, the colouring of which has bled through the wet prints. This is as sorry a lot of prints as we have ever seen. You had better expose a plate and send it up to us and we will develop it and print from it and let you see the results. You are evidently in want of knowledge of the very first principles of exposure, development, etc.

C. H. SMITH.—It is very difficult to obtain black prints with albumenised paper and the toning bath you use. Try printing under green glass and using the combined uranium and gold toning bath recommended in this column last week.

HENRY F. FOY.—The table you give may be used as a very fair basis to work upon.

W. H. WARDLE.—We have sent you introduction by post. Your print is hardly a fair standard to judge your work by as child photography is extremely difficult. Let us see some of your landscape work on your return from the Isle of Wight.

R. L. HENDERSON.—We certainly should not recommend you to use the bath as in our experience it never does give good tones and pure whites. You might try the following:

Hyposulphite of soda	... 3 oz.
Nitrate of lead	... 3 gr.
Chloride of gold	... 6 "
Distilled water	... 20 oz.

Place the prints in this without previous washing.

UPA.—(1) Yours is not a so-called triple achromatic but a triplet lens, for a note on which see the reply to F. C. Barton in our Editorial column, May 15, p. 382. We cannot accurately state the ratio aperture of your diaphragms, but they should be  $f/10$ ,  $f/12$ ,  $f/15$ ,  $f/20$ ,  $f/22\frac{1}{2}$ ,  $f/30$ . (2) The camera named has turned out some very good work, but we have never used it.

BLACKPOOL.—The glass for squeegeeing aristotype on to should be polished with French chalk or else some solution of wax and resin in turpentine rubbed all over and polished with a clean pad. You give us no details as to the print you enclosed, but probably the white spots are due to some sulphur compound bleaching the image.

DELTA.—Considering the disadvantages you work under, you are turning out very fair work. In the first place, it is advisable to use a rapid plate; this would enable you to give rather shorter exposures, and to obtain rather softer results. As to the prints, they are nearly all of them suffering from false lighting, in that you have used too powerful a reflector on the shadow side of the face. This fault is very marked in Nos. 5, 3, 2. (1) Very fair; the light is a little too strong on the hand, and not quite enough on the face. (2) The false lighting on the ear and side of the face detracts from this. (3) Ditto. (5) Poor; much too strong a top and front light to allow the neck and ear to be so strongly illuminated. (4) Good; only this sitter's eyes are not quite level, consequently it is very plainly seen in the full-face print; the left eye should be the further away from the camera, so as to hide this nature's exception to the law of symmetry as far as possible, but for this, the portrait is the best you have sent. We should advise you to use pyro and ammonia, and if you like to send us a sketch of your room, with dimensions marked, we will give you some hints as to what we think the best position for sitter. Let us know what your exact difficulty is with regard to toning, and we will write you privately. Your retouching is very good considering you have had no lessons, and you ought to get on, and we shall be pleased to do all we can to help you.



## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**"Amateur Photographer," etc.**—AMATEUR PHOTOGRAPHER, vol. i. to vol. xiii., a few copies wanting; what offers? — M. Mackenzie, 2, McKerrall Street, Paisley.

AMATEUR PHOTOGRAPHER, March, 1888, to December, 1890; offers? apparatus preferred. — S., 52, Greenhill Street, Manchester.

**Backgrounds.**—Canvas background, interior, 6½ ft. by 6 ft., 5s.; folding lamp, for oil or candle, 3s.—J. Walsh, 61, Queen's Park Road, Blackburn.

**Bicycle.**—Bargain. For sale, splendid diamond-frame safety bicycle, cushion tyres, balls all over, including pedals, only bought new month ago, and warranted perfect; take £7 15s.; rare opportunity for anyone wanting bargain; approval.—Cyclist, 18, St. Helens, Ipswich.

**Cameras, etc.**—Stereoscopic Co.'s 8 by 5 camera, tripod, four double backs, travelling box, leather case, printing frames, dishes, etc.; 5 guineas; appointment.—A. Wigginton, 45, Abingdon Villas, W.

Enlarging camera, Lancaster's Multum-in-Parvo, enlarges up to 15 by 12, new last January; price 28s.—F. Holmes, French Embassy, Albert Gate, S.W.

Sands and Hunter's patent Imperial 8½ by 6½ plate camera, patent swing reversing frame, extra long focus, all modern improvements, quite as good as new, in fine leather case, and three double slides; cost £13; price, a bargain, £8.—Mitchell, Oscar House, Lewisham.

Lancaster's quarter-plate 1890 Instantograph, with double set of appliances, new six weeks ago; £3.—Roberts, 107, Englefield Road, Canonbury, London.

Whole-plate camera, strongly brass-bound, three double backs; £6 6s.—S., 5, Park Road, Crouch End, N.

**Cameras, Lenses, etc.**—For sale, the property of a private gentleman, all in good condition; offers requested; may be seen at Stanley's, 13, Railway Approach, London Bridge, S.E.: Whole-plate bellows camera, one single and three double backs, Dallmeyer lens 3D, 7½ by 4½ bellows camera, with one single and six double backs, one light sliding tripod stand, two plate boxes, 7½ by 4½, and six light-tight ditto, three 5 by 4 plate boxes and two light-tight ditto, one 3½ in. lantern condenser, also a quantity of dry plates and good apparatus for electrical experiments.

Watson's Acme half-plate camera, three double backs, brass-bound, Eastman's latest roll-holder, specially fitted mahogany shutter, Ross's 8 by 5 rapid symmetrical lens, Sands and Hunter's shutter, travelling case, and sundries, almost new, cost over £28, price £20, or separately; also Luzo detective camera, square pictures, £2 5s.; cost £4 12s.; approval; deposit.—No. 162, AMATEUR PHOTOGRAPHER office, Creed Lane, 1, London, E.C.

12 by 10 best new camera, with three double slides (by Mason), in two leather cases, quarter-plate ditto (by Wainwright), with 5 by 4 Optimus lens, three slides, in leather case.—Finnart House, Ballantrae, Ayrshire.

Lancaster's quarter-plate Instantograph, three double backs, all brass-bound, shutter, instantaneous lens, and tripod, good as new; take 55s.; cost 69s.—Address, Abery, Sandgate, Kent.

8 by 5 bellows-body camera, swing back, landscape lens, tripod, and three double backs; lot 30s.; no approval; photograph and particulars sent; double backs alone cost 18s. each.—Frederick Sharpe, Oakham.

Half-plate camera, every movement, three double backs, best Spanish mahogany, in solid leather case, Ross's No. 4 portable lens, changing bag, best ash tripod, Newman's instantaneous shutter; anyone wanting first-class goods, a bargain; £12 10s. the lot; camera alone worth the money; also lot of chemicals, dishes, frames, etc.—F. Knight, 13, Albion Street, Leeds.

Half-plate bellows camera, movable stereoscopic partition, four double backs, 75s.; half-plate rectilinear lens (R. Reynolds and Branson's), 35s.; pair Optimus 5 by 4 rectilinear lenses, 55s.; 15 by 12 rectilinear lens, Waterhouse stops, 80s.; stereoscopic shutter and camera case, 9s.; three Tylar's half metal backs, 5s.—Kilburn, Eastfield, Batley Carr, Dewsbury.

Whole-plate long-extension camera, brass-bound, three double backs, Optimus 9 by 7 rapid landscape lens, Thornton-Pickard time and instantaneous foreground shutter, telescopic tripod, complete in solid leather case, all in new condition, the property of an amateur; price, a bargain, £10.—May be seen at Walter Tylar's, 48, Waterloo Road, S.E.

Quarter-plate London-made camera, conical bellows, all movements, three double backs, and six

Tylar's metal slides, rapid rectilinear lens, 'shutter', and tripod, all in good condition; price £4 5s.—F. W. Dadd, 192, Mare Street, Hackney.

Lancaster's quarter-plate Instantograph, Optimus R.R. lens, three double backs, stand, etc.; 50s.; or exchange for Kodak.—Hummel, 2, Thomas Street, Newcastle.

Quarter-plate Sciopticum camera and six double backs, in case, fitted with Ross's No. 2 portable symmetrical, in perfect order, very light; cost £8; price £4 10s.—Higginson, 2, Carlyle Villas, Venner Road, Sydenham.

A genuine bargain. In return for five 20s. postal orders I will forward, securely packed, half-plate leather bellows camera (by Watson, Holborn), as new, three double book form slides, every movement, mahogany tripod, Lancaster's half-plate Instantograph lens, with shutter; not sent on approval, but money returned if not found as represented within three days.—T. Gamson, 77, Essex Road, Islington, London, N.

Half-plate 1891 Lancaster's Instantograph camera, dark-slide, tripod, f/8 R.R. lens; bargain, 72s.—53, Slad Road, Stroud.

Lancaster's Instantograph, half-plate, with two double backs, lens, shutter, and stand, new last season; £3 10s.—F. Kirby, Chemist, Abington Street, Northampton.

Lancaster's half-plate 1891 Instantograph camera, with rapid rectilinear lens, double dark-slide, tripod, new; price only £5; worth nearly double; letters only.—Romus, 27A, Farringdon Street, E.C.

Whole-plate Optimus wide-angle camera, one double slide, latest improvements, sliding tripod, new, £6 6s.; whole-plate Taylor and Hobson's R.R. lens, Iris, new, £3 19s., warranted.—8, Montford Place, Kennington Green.

Quarter-plate camera (by Lawley), leather bellows, good condition, six double backs, and lens, 27s. 6d.; sliding-body mahogany camera, with back, 5s. 6d.; half rebounding shutter, 1s. 6d.; Decoudun photometer, 4s. 6d.; Magazine hand-camera, takes 24 quarter-plates, lens, shutter, complete, 32s. 6d., cost 42s.—Greene, 47, St. John's Villas, Upper Holloway, London, N.

Lancaster's quarter International, three double slides, tripod, lens, and shutter, splendid order, 47s. 6d., complete; also Lancaster's combination Rectigraph, 21s.—F. J., 4, Farquhar Terrace, Upper Norwood.

Underwood's half-plate Exhibition patent camera, perfectly new, stand, pneumatic release shutter, three double backs, Optimus lens, in waterproof canvas case; £6 15s. only, complete.—Wells, 114, High Street, Kingsland.

**Dark Slides.**—Two quarter-plate double dark-slides, for Lancaster's Instantograph, nearly new; 10s. 6d.—Dodson, 58, Hornsey Road, London.

Two double slides, to fit Lancaster's half-plate Instantograph; will exchange AMATEUR PHOTOGRAPHER from 228 to present time, good condition; part cash.—Walton, School House, Rawlinson Street, Barrow-in-Furness.

Three Lancaster's double metal slides, with adapter, for quarter Instantograph, perfect condition; cost 10s.; sell 6s.—Lemarchand, Richmond Park Road, Kingston.

**Hand-Cameras, etc.**—For sale, Abraham's Ideal hand-camera, new last year, very little used; price £3 15s.; cost £5 15s.—Address, Mons. Seavy, 164, Camberwell New Road, London, S.E.

Handsome mahogany hand-camera, Lancaster's lens, takes 5 by 4 plates, with carriers; price 35s.; a bargain.—Frederick Sharpe, Oakham.

5 by 4 hand-camera, with rack and pinion, two finders, six Blair's feather-weight double backs, no lens, £3; Instantograph quarter-plate, with Ross's lens, £1 10s.—No. 163, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Hand-camera, Swinden and Earp's, best in market, for 20 quarter-plates, with walking-stick tripod and 10 dozen plates; £7 10s.—F. Knight, 13, Albion Street, Leeds.

Adams' Ideal hand-camera, in excellent condition, hardly used; £4; approval.—L. C., 2, College Grounds, Malvern.

Houghton's automatic hand-camera, used once, cost £6 13s. 6d., with case; what cash offer?—No. 165, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Quarter-plate Optimus detective camera, six double backs, focussing screen, fitted with Taylor and Hobson's detective lens, also Optimus rapid view lens; price £8; or will exchange for large camera, 12 by 10.—Fred. Holmes, French Embassy, Albert Gate, S.W.

**Lenses, etc.**—Dallmeyer's R.R. W.A. lens, 1A A new; £4; cost £4 10s.—Harrison, Langley Park, Sutton, Surrey.

5 by 4 Optimus R.R. complete with stops, new; 22s.—H. Beckley, 52, Ilford Road, Ox. ord.

5 by 4 W.A. rectilinear; covers half-plate easily, revolving diaphragms, fitted with instantaneous shutter, working in lens tube, and pneumatic release; bargain, 22s. 6d.; or exchange for good box camera.—Griffin, Chingford, Essex.

Ross's 12 by 10 rapid symmetrical lens, in fine condition; price £7 10s.—C., Hornby Villa, Roj lake, Birkenhead.

Good whole-plate rapid rectilinear lens, make not known, very rapid; price 35s.—Weller, Northumberland Street, Morecambe.

Half-plate R.R. lens, with loose hood, stops f/8 to f/64, as new, splendid definition, approval with pleasure, price 21s.; also Underwood's XL shutter, time and instantaneous, 1½ in. hood, price 5s., cost 10s.—Goddard, 38, Sister's Avenue, Lavender Hill, S.W.

Ross's 6 by 5 rapid symmetrical, as new; 75s.—S., 5, Park Road, Crouch End, N.

Half-plate R.R. lens, cost £2, equal new; price 25s.; exchange good single lens, or offers.—James Gibbons, Haseley, Tetworth, Oxon.

Ross's 10 by 8 rapid symmetrical lens, fitted with Thury and Amey's £6 10s. shutter, best and fastest shutter made; both cost £14 10s.; good as new; will sell, bargain, £9, complete.—Mitchell, Watson and Sons, 313, High Holborn, W.C.

**Roll-Holder.**—Eastman quarter roll-holder, with 10 exposures, recent type; 28s.—Telfer, King Henry's Road, Hampstead.

Eastman's 8½ by 6½ roll-holder, good as new; cost £4 5s.; bargain, £2.—Mitchell, Watson and Sons, 313, High Holborn, W.C.

**Sets.**—Watson's whole-plate Premier set, complete, R.R. and W.A. lenses, dishes, trays, frames, etc., all nearly new and quite perfect; stamp for list.—W. Jones, Enfield House, Uffoulme, Devon.

Lancaster's 1890 Instantograph set, changing bag, dishes, lamp, measures, frames; lot 33s., any time.—Charles Howard, 55, Percival Street, Clerkenwell. Complete full-plate set for sale, all of the finest materials.—Executor, Florence Villa, Portswood, Southampton.

A gentleman giving up photography will dispose of his complete set, comprising Meagber's whole-plate camera, Ross's rapid symmetrical lens, with Newman's shutter and Iris diaphragm, three travelling cases, retouching desk, nine printing frames, complete set of dishes, chemicals, perfect condition; cost over £40; will sell £22; seen by appointment (London).—No. 164, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

For sale, Ross's portrait lens (list price £17 10s.), mahogany camera, whole-plate, one single and three double slides, with carriers for all sizes down to quarter, tripod, and studio stand, background, etc., all in good condition; lowest price £15; on approval. Thomas Usher, Bates Cottages, Holywell via Bockworth, Newcastle.

**Shutters.**—Kershaw shutter, out for lens 1½ in. diameter, in good order; what offers?—Pim, Bonaven, Antrim Road, Belfast.

**Sundries.**—Aquarium, hold 18 gallons, enamelled in black and gold, perfectly watertight, with stand; 57s. 6d., cheap; or part exchange for Lancaster's half-plate Instantograph, of modern pattern, complete.—W. Taylor, 23, Havelock Street, West Hartlepool.

Watkins' exposure meter, new, correct exposures; 8s.—W. R. Moore, Leigh, Lancashire.

## WANTED.

**Cameras, etc.**—Ashford's half-plate camera and 4 double dark-slides.—Geo. Elly, The Stores, Uttoxeter.

Box or studio camera, with two dark-slides, to take whole-plate portrait lens, must be cheap.—Apply Omega, The Cedars, Rickmansworth, Herts.

Camera, whole-plate, three slides, with stand and case, Watson's Acme brass-bound, with turntable, preferred, must have long extension, latest improvements, perfect condition; approval; cash.—Cunningham, 45, Finsart Street, Greenock.

Lancaster's Instantograph quarter-plate camera only, recent pattern.—Rev. Hick, Trimdon Grange, co. Durham.

**Dark Slides.**—Three of Tylar's whole-plate metal dark-slides; state lowest price for cash.—B. Jerome, St. Francis Xavier's, Mayfield, Sussex.

**Hand Cameras, etc.**—Griffiths' or other quarter plate hand-camera, cheap, or good exchange.—Copeman, Henstridge.

Good hand-camera; state make and price.—4, Eaton Street, Hanley.

**Lenses, etc.**—A good rectilinear wide-angle lens, for half-plate camera, must be cheap; would exchange quarter-plate International camera, or sell.—Crooke, Nantwich Road, Crewe.

Quarter-plate wide-angle rectilinear lens, about 3½ in. focus; cheap; approval.—10, Albion Street, Miles Platting, Manchester.

Quarter-plate fixed focus lens lens, for hand-camera.—H. Norris, 15, Seymour Grove, Old Trafford, Manchester.

**Roll-Holder, etc.**—Eastman's quarter roll-holder.—Longden, Wharmfisthe Chambers, Sheffield.

Eastman's quarter-plate roll holder, also good detective lens by Wray, Burr, or other good maker, cheap.—A. Spiller, Hillside, Hampstead Hill Gardens, London, N.W.

**Shutter.**—Thornton-Pickard time and lens instantaneous shutter, 1½ in. hood, preferred with regulating fan, cheap; approval.—Western, Clare, Cambridge.

Thornton-Pickard time and instantaneous shutter, 1½ in. hood; approval.—W. Turner, Merewood, Windermere.

**Views.**—Views, Cornwall; would purchase negatives (north coast) if suitable.—Bullmore, Newquay, Cornwall.



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*Subscriptions must be prepaid.*

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**NOTE.**—Trade Advertisements are received up to Tuesday morning.

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**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.

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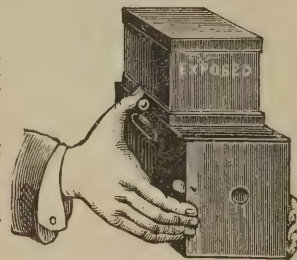
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Carries 24 3¼ x 3¼ plates; weighs only 3½ lbs., with plates; fitted with rapid achromatic lens and shutter for instantaneous or time exposure; a marvel of cheapness.

Price 12/6.

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About 20,000 C.D.V. and 20,000 Cabinet Mounts. A variety of Cameras at little more than half-price.

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Also Flash Lamps, Developing Dishes, Instantaneous Shutters, View Finders, Border Negatives, Cloud Negatives, Bromide Paper, Pressure Frames, etc., etc.

All at an ENORMOUS REDUCTION to clear, offered subject to being unsold on receipt of order, as these goods cannot be replaced except at ordinary prices.

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Size: 6 ft. 6 in. by 3 ft. 8 in. by 3 ft., or special size to order. Now made in superior style.

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*Tells his Experiences Round the World with*

## CARBUTT'S 'CELLULOID' FILMS

*General Office:*

STUDEBAKER BROS. MANUFACTURING COMPANY,  
South Bend Ind. U.S.A.

MR. JOHN CARBUTT, *Philadelphia.*

DEAR SIR,—I recently returned from a trip to *Australia*, the *East Indies*, *China*, *Japan*, etc., and I feel that I am doing but an act of justice to inform you of the satisfaction I derived from the use of your Films upon this long journey.

When I left home I provided myself with fifty dozen of your 'Eclipse Films,' and every exposure has been a delight to me. I have worked under the most trying circumstances and conditions of light, heat, moisture, etc., when I could hardly expect good results, but your Films never failed to do their duty. In *Samoa* I made snap-shots before sunrise.

The heat in *Australia* last January and February was unusually intense; this, together with warm water, did not hinder the development. I of course had to use great care in my operations, and omitted the glycerine in the treatment of the Films. What I had most to contend with was over-exposure, but I could handle this quite satisfactorily by the use of Hydrochinon Developer.

I could say a great deal for your Films, but I do not wish to tire you. I worked with two officers of our ship who used English plates (\*\*\*\*s), and on the *Borneo Coast* and in *China* all they could get in development was a spot on the cabin floor, while my films came out satisfactory every time. Not once did the CARBUTT FILMS slip off in that intense heat.

As a result of all these, I converted a great many amateurs and professionals, and I hope it may result beneficially to you.

With kind regards, I am, yours truly,

W. B. STOVER.

FOR SALE BY ALL PROMINENT DEALERS.

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GREAT BRITAIN ... THE LONDON STEREOSCOPIC AND PHOTOGRAPHIC  
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KEYSTONE DRY PLATE AND FILM WORKS, WAYNE JUNCTION, PHILADE



## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.*

**OUR VIEWS.**—Mr. W. T. Stead's projected "National Society of Lanternists"—The Work of such a Society—The Prospects of Success—The *Photographic Quarterly* set Mr. Stead a-thinking about Lantern Work—The Duke of Edinburgh sits to Mr. Shapoor N. Bhedwar—Wanted the Use of "Dark-rooms" at the Western end of London—What is thought of the "AMATEUR PHOTOGRAPHER'S ANNUAL" in New Brunswick—The Probability of the Photographic Convention Meeting in Edinburgh in 1892—A Society for Macclesfield—National Photographic Exhibition at Leeds—Eclipse of the Sun on the 6th instant—Photographs of Luminous Objects in *Scribner's Monthly*—The Eastman Photographic Materials Company, Limited, Increase their Capital—The *Photographic Quarterly* for July, projected contents.

**LEADER.**—Home Portraiture.

**LETTERS.**—Holiday Resorts (W. H. Hayles)—Help for the Ragged School Union (John Kirk)—Amateurs' Albums (Common Sense)—Amateur and Professional (Lola).

**COMMUNICATED ARTICLES.**—Influence of Development upon Gradation (G. T. Addenbroke)—Photo-Micrography (Pringle)—Composition in Light and Shade (Robinson)—Collotype Made Easy (Savroff).

**THURSDAY EVENINGS AT THE CAMERA CLUB.**

**NOTES.**—Edinburgh Centre.

**PICTURE GALLERIES.**—Early English Masters ("Loiterer").

**APPARATUS.**—The "Holiday" Candle Lamp—The Photo-Autocopyist—The Marvel.

**HOLIDAY RESORTS AND PHOTOGRAPHIC HAUNTS.**—Skegness (Lincolnshire).

**REVIEWS.**—"Painting on Glass for the Magic Lantern"—"A Class Book on Light."

**QUARTERLY EXAMINATIONS.**

**SOCIETIES' MEETINGS.**—Brighton—Brixton and Clapham—Dukinfield—Faversham—Glenalmond—Hackney—Holborn—Kendal—Liverpool—Lowestoft—Richmond—Sheffield Camera Club—Sydenham—The Photographic Society—Tunbridge Wells.

EVERYTHING seems to point to a very active winter with the lantern. Mr. W. T. Stead, Editor of the *Review of Reviews*, calls our attention to his proposal to form a "National Society of Lanternists," of which the special points are:—

- The combination and concentration of individual effort for promoting the education and recreation of the people by the aid of lantern services, lectures, and entertainments.
- The stimulation and cultivation of slide painting and reproduction as an art.
- The establishment of a system of exchange bureaux for the interchange and hiring of slides, and the diffusion of lantern literature.

Mr. Stead proceeds in his circular to set out the heads of the scheme—Central committee of management; expenses; local branches, either dependent or self-supporting; membership; lanternist or lecturer—and the following special features of the society:—

- That there should be a classified list of all the slide sets issued for sale or hire, with the lowest prices at which they can be procured for mission work.
- That there should be a directory of all competent slide makers, with the terms at which they will work, and particulars of their productions.
- That there should be a directory of all lantern makers and appliances, with the prices at which their productions can be bought or hired.
- That there should be a list of all professional lanternists and lecturers throughout the United Kingdom, with statement of their terms, and particulars as to the nature and subject of their entertainments.
- That there should be published monthly an official organ of the society, which shall contain an account of the progress of the society, together with reports furnished from time to time by the local committees to the central committee of management.

A form of enrolment, to be filled up by those who are in sympathy with the aims and objects of the proposed National Society of Lanternists, may be had upon application to Mr. Stead, Mowbray House, Temple, E.C.

SUCH a society as has been foreshadowed in the foregoing will be found, we fear, a very difficult matter to carry out to a successful issue. The amateur photographer who is also a lanternist finds that he has his time very fully occupied in the winter with "shows" of his own or his friends, and would be able to give little or no help to such a society as Mr. Stead proposes; and we very much expect that Mr. Stead will find that the lantern-slide maker, professional lanternist, and lecturer will demand such terms as to put them outside the work of the society. There are, of course, many scores of the readers of the *AMATEUR PHOTOGRAPHER* who could help Mr. Stead, if, like Mr. Harris, they were so "disposed," but we think he is demanding too much from those who if they help will do so out of charity, and with the real idea of advancing education. We have no doubt an expression of opinion from our subscribers in the correspondence columns would be gratifying to Mr. Stead.

It will be remembered that it was an article which Mr. Stead republished in an early number of the *Review of Reviews* from the *Photographic Quarterly*,\* which set him a-thinking about establishing a Magic Lantern Mission.

\**Photographic Quarterly*, vol. i., April, 1890 (London: Hazell, Watson, and Viney, Ltd., 1s.).



We understand that Mr. Shapoor N. Bhedwar has been honoured with a sitting by H.R.H. the Duke of Edinburgh, at Clarence House. Mr. Bhedwar has been exceedingly successful in all his photographic work, and although we have not seen the portrait of the Duke, we have no doubt Mr. Bhedwar has secured a faithful photograph.

WOULD some of our readers in the western end of London, Hyde Park, Bayswater, Kensington, and Earl's Court grant us permission to introduce amateur photographers in order that they might have the use of their dark-rooms? We particularly often want the use of a photographic dark-room for our lady subscribers, who come to town for the season, and who in the country have the most complete accommodation, and in London sadly feel the want of a place to develop the plates they expose.

THE following note upon the "Amateur Photographer Annual" reaches us from New Brunswick:—"I have just got a copy of your 'Annual' for 1891, and cannot help telling you how very much pleased I am with it. It is certainly unique, and one cannot over-estimate its usefulness. It has already saved me several weary hunts through back numbers." The second edition is being pushed on with, and will be issued shortly.

OUR Edinburgh correspondent writes us that on the motion of Mr. J. M. Turnbull, the question of inviting the members of the Photographic Convention of the United Kingdom to visit Edinburgh in 1892 was discussed at the last meeting of the members of the Edinburgh Photographic Society. The Convention owes much of its success to Scotchmen, and we are certain all workers with the camera would enjoy a week in Edinburgh.

It is probable that a society will be formed at Macclesfield.

WE have received information that a National Photographic Exhibition on a large scale is to take place in Leeds towards the end of the year, promoted by the Fine Art Gallery Committee of the Leeds Corporation, and the Leeds Photographic Society. The probable date of opening will be towards the end of November, and the exhibition will remain open until the middle of January. The official prospectus will shortly appear. In the meantime, any information may be obtained from Mr. Geo. Birkett, Curator, Fine Art Gallery, Leeds.

In our opinion the only matter likely to militate against success is the length of time the exhibition will be open; on the other hand, in such a centre as Leeds, there should be no difficulty in obtaining a thoroughly representative show of photographs.

It will be of interest to our readers to be reminded that on Saturday next, the 6th inst., from 5 to 6.30 p.m., there is to be an annular eclipse of the sun, which will be visible at Greenwich as a partial eclipse. For the benefit of those who are anxious to attempt a photograph of the phenomenon we may point out that the image of the sun is one inch in diameter for every ten feet of focus.

THE June number of *Scribner's Magazine* has some very wonderful reproductions of "Photographs of Luminous Objects," the text being supplied by Mr. Wallace Goold Levison. The author says: "I have believed that some examples, such as are given in the accompanying illustra-

tions from studies in this special direction might interest many in a branch of photography hitherto seldom followed except in scientific research. These are reproductions by mechanical processes directly from the negative without being retouched or changed in any way." The illustrations include a portrait made by lamp-light, exposure four minutes; a firework device, designed to represent the battle between the *Monitor* and *Merrimac*; the Siege of Vera Cruz, as it was presented in fireworks at Manhattam Beach; from a negative exposed during the discharge of two of the cases of a wheel charged with steel filings expressly for the purpose; the interior of a foundry at casting time, in which the figures were taken by flash-light, and the molten metal made its own picture at the same time. Several other pictures are given, and we should strongly advise those interested in photography to read the article.

In concluding, Mr. Levison says: "Indeed, every advance in the art of photography develops important applications of it in entirely new and unexpected directions. Not only a small body of professional photographers are intensely interested in important experiments, but a body of amateurs so large as to include almost every section of a community is busily at work with new devices and new methods, supplementing private letters, diaries, newspaper correspondence, and literary work with accurate and picturesque records of every degree of importance. The result will be that this age, as no previous one, will leave a complete pictorial representation of all phases of its varied life."

THE Directors of the Eastman Photographic Materials Company, Limited, called an extraordinary meeting of the shareholders on the 26th ult. to empower them to increase the capital of the Company from £150,000 to £200,000. The Chairman (Colonel J. T. Griffin) said (*vide* report in *Financial News*) that:

"The business of the Company had altogether outgrown present means of carrying it on. Its growth, in fact, had been in many respects far beyond the expectations of most sanguine friends. At the last annual meeting the question was asked when the balance of the unpaid capital would be called up. The answer was, 'Not until it is required.' At that moment the Company had sufficient funds for carrying on its work; but since then the volume of business had so enormously increased that the Directors found the capital largely locked up in outstanding accounts. More than that, the building at Harrow was now completed, and within a few weeks would be in a position to manufacture the larger part of the Company's goods. Under those circumstances, the capital was found to be not quite sufficient for trading purposes, and, therefore, the Directors came to the conclusion to ask the shareholders' authority for increasing the capital from £150,000 to £200,000. They wanted, at present, only £10,000 or £15,000; and as showing their confidence in the business being transacted in Europe, the parent Company had offered to take up £10,000. The Company at the present moment owed the parent Company about £8,000 for goods received, and upon that sum they were obliged to pay interest. The Directors wished to relieve themselves of that obligation, and to become their own masters. He might add that the volume of business had increased 50 per cent. during the past three months, whilst orders were still coming in to such an extent that they could not be duly executed. It was also in contemplation to establish branches of the Company at Paris, Berlin, and other places on the Continent, all of which work would require additional capital, inasmuch as it was necessary to keep large stocks at the various depots."

The resolution was put to the meeting and duly carried, "That such new shares shall be issued at such times and in such manner upon such terms and conditions as the Directors shall from time to time determine."

THE *Photographic Quarterly* for July, which will complete vol. ii., will, as far as at present arranged, contain



articles by: Mr. John Andrews, "Composition"; Mr. Philip H. Newman, "What to Photograph"; Mr. G. H. James, "Autotype Printing in Pigments"; Mr. E. H. Jeffrey, "In Holland with a Camera"; Rev. T. Perkins, "A Ramble in Spireland" (illustrated); Mr. C. H. Bothamley, "The Lantern and the Manipulation of It" (illustrated); Mr. Clement J. Leaper, "Toning of Images"; "A Sketch" by Luke Sharp of the *Detroit Free Press*; and an article by Mr. George Davison, Hon. Secretary of the Camera Club, entitled "Shall we Renounce?"

The frontispiece will be a production of a flashlight photograph, "The Future Schoolmaster," one of the series for which the Countess Loredana da Porto Bono was awarded a gold medal at the recent Liverpool Photographic Exhibition. It is also hoped that the illustrations will include a copy of "The Beggar Maid," by Mrs. Eveleen Myers.

From the foregoing it will be seen that the last number of the second volume of the *Photographic Quarterly* will thoroughly maintain the high standard of previous issues of the magazine.



### HOME PORTRAITURE.

To the more ambitious spirit home portraiture opens up an enormously wide field for practical experiments, which, if successful, lead to fine pictorial results. We shall therefore give a few hints which may suggest some subjects to the more advanced worker who is not afraid of combination printing, and the little trouble it entails.

We will take first of all a comparatively easy subject. This is a sitter seated by a window writing or reading; through the window is seen a fine landscape. Now, if we give sufficiently long exposure for the figure to obtain detail in the deeper shadows, we shall enormously over-expose for the landscape, so much so as to make it extremely difficult to develop the plate so as to obtain detail in the landscape. The best plan to obtain such an effect is to make two exposures; thus we may suggest 15 to 20 seconds exposure for the figure, the lighting of which will be the so-called Rembrandt style, whereas probably 1 to 2 seconds would be sufficient for the landscape. We should give the longer exposure to the figure first, and then, without changing the position of camera, or allowing the sitter to move, we should insert another dark-slide, and give a short exposure for the landscape. On development we shall obtain two negatives, one well exposed for the portrait and over-exposed for the landscape, the other correctly exposed for the landscape and a mere ghost of a figure. By double or combination printing, we can obtain a very good picture. Another subject which would give the best results by flashlight would be a group round a fire, which may be treated in the same way, and if a good negative of the fire itself is required, it is advisable to throw salt or powdered sulphur on to it to make a rather more actinic blaze.

Another class of subject which is by no means difficult, though one which perhaps ought not to be included in picture making, is the production of ghost pictures, which are by no means difficult to make. The usual method of making the ghost wear white cerecloths is entirely unnecessary. Thus a subject for a picture might very well be made by those possessed of the requisite accessories—an old hall, some antique clothes, etc. We will call our picture "The Ancestral Ghost;" the scene, a long passage or corridor dimly lighted, preferably by a grated window high up; a friend, either lady or gentleman, dressed in habiliments of the last century. Now, if we have such a corridor we can easily make the picture. A magic lantern placed outside the window, which may be real or temporary, may be used to project a beam of light on to the floor, in the path of which

the lady or gentleman should stand for about one or two seconds; the cap should be placed on the lens, and then the subject allowed to walk away, and a fairly long exposure given to the corridor. If this plate be successfully exposed and developed we shall have a somewhat thin negative of the corridor or room, with a ghostlike figure in the beam of light, and by printing deeply on ordinary albumenised paper, tinted blue or green, we shall have a very fair picture of a moonlight visitor in the shape of "the ancestral ghost."

Another subject, or, in fact, a host of subjects, may be taken from some well-known poem. Thus we held a competition in Shakespeare's well-known lines, "The Seven Ages of Man." This is, however, a difficult subject, because of the necessary sequence of seven pictures; but let us take one or two lines, and see how well they suggest a picture. Thus Sir Edwin Arnold's charming lays of "The Twelve Months" would furnish us with a picture for every lay; thus for December—

"In fretwork of frost and spangle of snow."

Tennyson, too, gives us many a suggestion; his charming songs in "The Princess," and "In Memoriam" teem with subjects by no means difficult to illustrate. William Cullen Bryant is also another writer whose breezy poems certainly lend themselves most charmingly for titling woodland scenes. The Photographers' Association of America have this year set as a subject "Elaine," which is full of suggestions; and the only way to get hold of inspiration for picture making from such material is to read the poem, digest it, and find out in leisure moments all the hidden beauties in it, and then artistic results may be obtained. To this work, however, we need hardly devote any more space. Any operator with artistic and refined taste will find his own pictures without any help from us, and successful execution is merely a matter of practice and experience.



## Letters to the Editor.

### HOLIDAY RESORTS.

SIR,—If I might supplement the paper upon Cambridge which appears in to-day's issue of the AMATEUR PHOTOGRAPHER, I would like to say a few words about permission. Of course, no permission is required for taking street views, but inside the colleges it is different; a porter will soon ask you if you have permission.

The best way is to interview a porter before commencing operations; he would tell you whom to apply to, or he might be able to give it himself. At Trinity, amateurs have now to sign in a book kept for the purpose at the porter's lodge; that constitutes permission. I think it is not very difficult to obtain permission at most of the colleges, but I thought it might save some slight inconvenience by sending you these few remarks. I might perhaps also say "the Backs" should certainly not be missed, as several good views can be got, and the little river Cam is interesting from Byron's Pool at Grantchester (two miles south of Cambridge) to three or four miles lower down.—Yours, etc,  
Cambridge, May 29th, 1891. W. H. HAYLES.

\* \* \* \*

### HELP FOR THE RAGGED SCHOOL UNION.

SIR,—I am emboldened to ask your leave for a brief space in which to plead the cause of the holiday homes movement of this union, for the reason that among the 4,000 voluntary helpers we have many to whose skill, as amateur and professional photographers, we are indebted for many effective pictures of the 50,000 attendants at our 200 schools and missions.

The object of the holiday home movement is a fortnight's holiday in the country, for the children of our schools.

Our needs are the pounds, shillings, and pence of your



readers; gifts of boots, clothing, and provisions; drawing-room meetings; garden parties; ladies' working parties; church, chapel, school, family, hotel, office, warehouse, and workshop collections. Will your readers—as all can—in some way respond to our appeal?

Our holiday homes are in the midst of picturesque scenery; from any of your readers who may require practice in figure, group, or landscape work I shall be glad to hear.—Yours obediently,  
Ragged School Union, Exeter Hall,  
Strand, London, W.C.

\* \* \* \*

#### AMATEURS' ALBUMS.

SIR,—An article appears in a recent issue, "Amateur Albums," by "Nestor." Now it seems to me that "Nestor's" opinion of an amateur photographer is, to say the least of it, most extraordinary. He makes him out to be a person with a very small amount of sense indeed. I do not think for a moment that every amateur's attempts at portraiture are, as "Nestor's" states, "horrible," nor do I think every amateur is so devoid of sense as to leave his walking-stick so that it will come into his pictures. Does every amateur put every photograph he takes into his album? I think not; most amateurs like to keep only what pleases them, very few care about pictures which are not only eyesores to themselves, but which are apt to make them appear foolish in the eyes of their friends. I know many beginners in photography, and I have seen all or nearly all their work, but I think that pictures which are "horrible" to the eyes of people possessing "Nestor's" delicate observation are either destroyed before they are finished or else put where no one will see them but the operator.—Yours, etc.,

COMMON SENSE.

\* \* \* \*

#### AMATEUR AND PROFESSIONAL.

SIR,—The vexed question of Amateur v. Professional seems to come periodically to the fore, as surely as the sea-serpent and the "silly season," or even as the influenza epidemic bids fair to do. It does not seem to me a question of the mere selling of one's work. I am an amateur of the very lowest grade, and all that I have learned of the art of photography has been from books and the pages of the AMATEUR PHOTOGRAPHER. I never saw a professional or even one of our kings among amateurs at work, and never had a lesson. Well, one day, a few weeks after I had purchased my camera, I took some photographs of groups at a school feast by way of amusing the scholars. By good luck they proved successful, and dozens of the sitters wanted copies. "Very well," said I, "every one who wants a copy must pay 6d. to the sick fund of the school." Did this sale convert me into a professional? Subsequently the members of a mothers' meeting implored me to take them, and instead of presenting each mother with a copy, I handed them all over to our vicar for his missionary sale, where they were bought. Then the haymakers were so delighted with their appearance that they pleaded for copies of themselves, which they received on paying so much to a local charity. An old lady then "sat" to me, and was presented with a dozen copies of herself. I heard privately she wanted another dozen but did not like to ask for them, so I promptly sent word that she should have them on handing over a certain sum to me for a poor orphan in whom I was interested. And lastly, the editor of one of our gardening papers has more than once asked for a photograph of some special plant for publication, and sent me the remuneration ordinarily offered for the same, which I have at once devoted to some charitable object. Now it seems to me that none of these sales of my works can drive me from the ranks of amateurs, any more than Lady Dalton Fitzgerald became a professional when permitted by the Queen to sell her views of Buckingham Palace for the benefit of the Belgrave Hospital for Children. I suppose one must draw a line somewhere, or I myself would even go further, and say that a photographer might still be an amateur even if he occasionally (such as a boy at school) added a few pence to his allowance by the sale of his photographs. A water-colour sketch sold to a friend does not make the artist a professional, any more than a paid article in one of our papers would convert the writer into an author as that word is commonly understood. I think that it should be binding on any amateur competing in an exhibition, that the work be entirely his own, from the very beginning to the very end.—Yours, etc.,

LOLA.

## Influence of Development on Gradation.

At the meeting of the Photographic Society of Great Britain on the 26th ult., the Chairman (Captain Abney) said the subject for discussion was the "Influence of Development on Gradation," and called upon Mr. G. L. Addenbrooke to open the discussion.

Mr. G. L. Addenbrooke said that on January 22nd, 1883, a discussion on this subject took place, and what he had to say was merely a repetition of what he said then. At that time he made a number of experiments with a sensitometer given him by Mr. Warnerke. The sensitometer was placed at the distance of a foot from a candle, and plates specially made for him were employed. Trial exposures were made until he found that with a normal developer he could just see the smallest trace of No. 25. The object of the experiments was to ascertain how far the lower numbers were blocked up. The first series of negatives were made by using a normal developer composed of 2 minims of ammonia and one-eighth of a grain of bromide to the ounce, the pyrogallol varying from an eighth of a grain to 2 grains to the ounce, distilled water being used. All the plates were developed at the same temperature, and were kept in the developer for the same length of time. As a result there was a gradual improvement in the density, but towards the end of the series, increasing the amount of pyrogallol had but little effect. He also tried a time action, the duration of development varying with the quantity of bromide. He also made a series with a developer containing 2 grains of pyrogallol to the ounce, and varying the ammonia from half a minim to about 4 or 5 minims, and found that when the proportion of 2 of ammonia to 1 of pyrogallol was exceeded, but little alteration was produced. Indeed, beyond these limits either no change was effected or a deleterious effect was produced. Mr. Mackie had been experimenting in this direction lately. At the time he made his communication there was no discussion, and as his experiments were not received with any favour, he had not thought it worth while to continue them.

Mr. W. Atkinson asked whether with a slow developer better results were obtained.

Mr. Addenbrooke thought slow development favoured some variation, but it did not produce any very noteworthy effect.

Mr. A. Mackie had made a series of experiments in view of this discussion, and they were practically upon the lines followed by Mr. Addenbrooke, only the latter used plain pyrogallol and distilled water.

He took as a normal developer 2 grains of pyrogallol, 1 grain of bromide, and 2 minims of ammonia to the ounce. He developed until the 25 on the sensitometer was visible by both transmitted and reflected light. In the first series the amount of pyrogallol was varied from  $\frac{1}{2}$  to 4 grains to the ounce. It appears that up to a certain amount the pyrogallol increased the density of the negative, but a larger quantity did not increase the effect. A second series was made, the developers consisting of  $1\frac{1}{2}$  grains of pyrogallol and 2 minims of ammonia, the bromide varying from 0 to 4 grains to the ounce. From these plates it seemed that within certain limits the increase of pyrogallol and the increase of bromide acted practically in the same way.

The third series was made by varying the amount of ammonia. These alterations seemed to have but little influence. The developers used were composed of  $1\frac{1}{2}$  grains of pyrogallol and 1 grain of bromide to the ounce, the ammonia varying from 1 to 8 minims. Increasing the ammonia practically had the same effect as decreasing the bromide or pyrogallol, but the results were not so striking with ammonia.

Mr. Chapman Jones said he commended Mr. Mackie for having developed all his plates till a certain tint showed. Of course it was interesting to know the effect of time, but practically the time of development was not an important question unless it was necessary to do a lot of work. The statements that Messrs. Hurter and Driffeld made in their paper were with almost no qualifications. They said that the ratio of the densities were unalterable. They had made variations in the time of development, and variations in the form of developer, but practically the ratios of the densities were unchanged. That statement was made without any limitation whatever, and it was to that that he took exception—he thought those statements required qualifying. The negative plate has an appreciable thickness, every operation



commences on one side of the film, and works downwards through it. If development began on one side, then the shadows ought to be obtained before the lights, but these experiments show that the circumstances of the case are different, that although the details of the shadows lie on the surface, yet they are the last to appear. It was difficult to imagine throughout every modification this uniform ratio of density could be obtained, but he believed that within certain limits it could be obtained provided under and over exposure were excluded from consideration.

Dr. F. Hurter said he and his colleague were under the belief that photographers assumed that they could, by judicious development, remedy the effect of over-exposure. Recently, however, a London professor called upon them and told them they were entirely mistaken, for he did not think there was a photographer in existence who believed he could correct the effect of over-exposure. What he taught was that ammonia acted upon a plate in the same way as light did, and that a judicious use of ammonia might remedy the error. But whenever he (the speaker) unpacked any plates, he found enclosed a prescription for the development of the plates, and was told what to do should the picture be over-exposed. He thought he was correct in saying that a great many photographers believed that the evil effects caused by over-exposure could be remedied by the use of more bromide, and in case of under exposure by the use of more ammonia. That was where the general methods of photographers were at fault. He believed he had made an alteration. Again, in judging these results of experiments made in the camera, photographers relied entirely upon their eyes unaided by any instrument. The eye, however, was perfectly powerless to estimate the value of two tones, for when they are unequal it was impossible to say what was the amount of the inequality between them. He and his colleague had endeavoured to supply the necessary experiments. He was satisfied that in the original paper there were errors in both directions. That paper had been misunderstood, partly owing to their own fault, as they used the word "density" in a peculiar sense differing from the meaning applied to the term by photographers. Captain Abney expressed the results of his measurements in transparencies, they could have done the same, but then it would have been a difficult matter for them to have discovered their result. Their experiments were made for the special purpose of ascertaining how far development might be varied without altering the speed of the plate. When the ordinates are taken in arithmetical progression, the curve obtained did not supply much information about the character of the plate, but when the densities were laid down on ordinates arranged in a geometrical progression, the curve assumed a different form, and there was one point on the curve which always remained on the same ordinate, however much the development might be varied. This point is the point of flexion of a double curve, and if a tangent be drawn to this point so as to intersect the line of exposure, it would be found that these tangents drawn from curves obtained by varied development would all intersect the exposure line at the same point. This point must be considered as characteristic of the plate under examination and as measuring its speed. They had found that by giving an extraordinary dose of ammonia, the curve was raised higher and the point of intersection shifted further out, the tangent remaining parallel to its former position. That was the greatest variation they had yet found in the influence of development, but the peculiar part of this change was that it did not affect the printing quality of the negative at all. Indeed, the effect of shifting up the curve was the same as placing a semi-transparent medium in front of the negative when printing. It was possible to make the negatives appear more or less brilliant to the eye, but the density ratios remained practically the same.

Mr. G. L. Addenbrooke, referring to the case of photographing a lady in a white dress against a dark background, said that in order to avoid losing the details of the dress, and at the same time to secure the details in the dark portion of the picture, he should reduce the amount of bromide and pyrogallol, and should so obtain a very equal development, the action on the shadows taking place rapidly in proportion to that on the lights. In the case of a landscape with dark foliage he would give a very full exposure and use a fair proportion of bromide, a full quantity of pyrogallol, but would keep the ammonia down very much. In that way it was possible to secure all the brilliancy that is obtainable in the lower tones without too great density, and it was with the object of ascertaining what might be done in varying negatives that he experimented. The variations were very small.

Mr. W. E. Debenham considered the want of range of gradation in photography was its greatest defect; that he thought would be admitted. If the range of gradation could be increased by development it would be most important, but Dr. Hurter said it could not be. The want of perfect gradation in photography was a problem that must be attacked with all possible vigour, and if there was no hope of attaining this end by development, it might be done in other ways.

Mr. H. G. Moberly thought there was a little misunderstanding as to what Dr. Hurter really did mean. He did not deny that in one negative it was possible to obtain a greater amount of density than in another.

Dr. Hurter said the difficulty was still the distinction between opacity and density. Photographers judged simply by the amount of light transmitted, while they weighed the quantity of silver. From the photographer's point of view, it appeared that the gradation to the eye was altered, but from the ratios it was evident that no alteration was effected.

Mr. E. Clifton said that Dr. Hurter used the term density in a chemical sense, while photographers used it in an optical sense.

Mr. J. Howson said that although it appeared that photographers could not alter the density ratios they could the printing qualities. This was all they cared for.

Dr. F. Hurter said that did not enable them to make an over or under exposure into a correct one.

Mr. W. H. Bennett said by difference of development of two plates similarly exposed upon a mantelpiece of dark oak and white marble, he had been able to bring out details in the one not shown in the other. The difference in development was that in one case the ordinary method had been adopted, and in the one where the detail was obtained there was first a faint image produced by using very little pyrogallol and bromide, and a full dose of ammonia, the image being subsequently strengthened by further development.

The Chairman said there had been some mistakes in the way in which the terms density and opacity had been used. Dr. Hurter had used it in the chemical sense, while they used it in the optical sense. He did not think casual eye determinations of much value, and there had been a slight difference between Dr. Hurter and himself as to the mode of measuring, but he thought they were coming by degrees to a mutual understanding as to how they should agree as to measurements; and he therefore did not wish to say anything till Dr. Hurter had had an opportunity to make certain experiments. When they got scientific men working in the science of photography they were certainly taking a step in advance. He admired immensely the work Dr. Hurter and Mr. Driffield had done, and they had heard how Dr. Hurter had left Liverpool at very short notice to come up to that meeting. He begged to thank Dr. Hurter for the trouble he had taken in coming there that evening. No doubt the discussion would be continued on a subsequent occasion, and doubtless Dr. Hurter would read in the Journal what had taken place and would favour the Society with his comments.

Dr. Hurter was very much obliged for the kind words spoken by Captain Abney, and was exceedingly sorry that it had been his fate to come into collision with him. He could only say that having paid a visit to Captain Abney's laboratory, and having made experiments with his sector himself, he had come to the conclusion it was simply perfection. The differences between Captain Abney and themselves had now been so far cleared away that they each trusted the other's instrument. There was a difference between the results of the two instruments, and he thought it was this difference to which Captain Abney has just alluded.

**The "Sensible" Focussing Cloth.**—Mr. T. Manson writes:—"In your issue of April 17th you kindly gave my focussing cloth a very favourable notice, and through that and my advertisements in your paper I have received a large number of orders. In one point, however, it has caused some misapprehension, and I should be glad if you would kindly set it right. It reads, in part underlined, 'Is large enough to admit the head and one arm to rack out camera.' This is so with the larger sizes, but with quarter-plate size it is impossible, and a very cramped operation in half-plate size. The idea was that the focussing screw should be turned from outside the cloth, which is quite easy. I have used one two seasons, and always turned all the screws from outside, and so have others about here to whom I have supplied them. As it has caused me some little trouble, a line setting it right would be much appreciated."



## Photo-Micrography.—X.

BY ANDREW PRINGLE.

### OPAQUE OBJECTS—BLACK GROUNDS—POLARISED LIGHT.

For various reasons the photographing with microscopic objectives of opaque objects is surrounded with considerable difficulties, and these difficulties are very great indeed when the work requires to be done at anything like high magnification. It is not hard to understand that when we have to use a lens of even medium power the lens has to be placed so near to the object that it is extremely difficult to get a beam of light directed so as to illuminate the object, for the light must, of course, come from the front of the object so that the lens and the sensitive plate may be illuminated by light reflected from the object; and at high power work the front combination of the objective is almost touching the "cover-glass" of the preparation, while, if we are using an immersion lens the attempt is out of the question altogether. At the same time, much useful work may be done on opaque objects if low magnification only is required. To be more definite, I have done some useful work, and I have seen still more valuable work done with objectives as high in power as half-inch focal length.

It will be found that for this class of work there is an advantage in having objectives which are more or less tapering towards their front combination, because this shape allows the light from the front to fall on the object at a more acute angle, which is, of course, an advantage, especially when no reflector is to be used. If I am working without any reflector I place the radiant as near the tube of the microscope as my objective will allow, that is to say, I make the angle of illumination as acute as possible, and some condensing appliance is placed between the light and the object. The condenser, which may be a bull's eye, is so arranged that the whole of the object desired in the photograph is evenly illuminated, and this position must be found by experiment. But it will be found a great improvement and a great facilitation to use a reflector of the kind figured (fig. 5), and usually called a "parabolic reflector."

This instrument consists of a metallic speculum somewhat in the shape of a half cup, and it is well to be careful not to damage the bright surface by fingering it. This may be used with daylight, but the better way is to place a lamp such as is used for the ordinary photo-micrographic work on the side of the stage directly opposite to the reflector, and to parallelise the rays falling on the reflector by means of a bull's-eye or other parallelising appliance. It is to be noticed that we do not use this reflector to reflect back rays which have already been reflected from the object, though it is sometimes wrongly used in this way; but the reflector is to illuminate the object by reflection of the light.

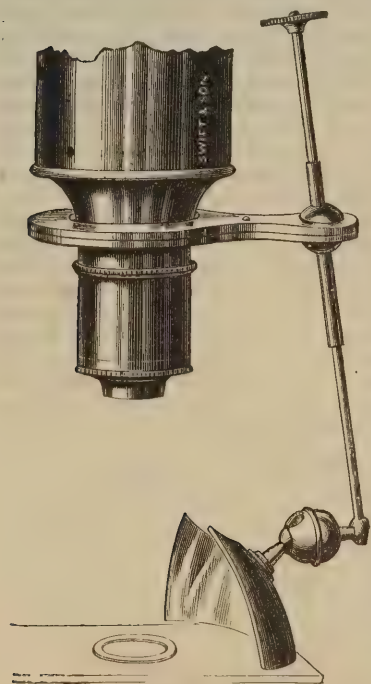


FIG. 5.

The proper position for the reflector must be found by obser-

vation; it is not difficult to tell when the object is well and evenly illuminated if we examine it through the microscope in the usual way. This useful instrument is made by all opticians; the one here figured is by Messrs. Swift and Son.

Sometimes objects are mounted specially for observation with the "Lieberkuhn." This is a very pretty instrument seldom used nowadays. Fig. 6 shows its appearance. The object is mounted on an opaque ground surrounded by clear glass; parallel rays are projected from the sub stage through the clear area, and from the metal speculum are reflected back upon the object. With this instrument it is of importance that the object shall be in the focus of the hollow mirror—or, rather, speculum—and it follows that each objective requires a Lieberkuhn of a suitable focal length. As this instrument is now but rarely used, and as objects are not often mounted for it, I shall not enlarge on this subject further than to say that by means of it the best photographs of opaque objects I have seen were obtained.



FIG. 6.

A very important branch of our work sometimes is that of showing transparent objects on a black background; diatoms, at low and medium powers, are perhaps best shown in this way. Various contrivances have been used for this purpose—"spot-lenses," "paraboloids," and so on; but the best method and the commonest now is the use of opaque discs placed in the condenser. These are, I believe, sold with every condenser, though I do not know their technical name. Their effect is to shut out the central rays, so that practically the object becomes its own illuminant. For practice with in this work there are no better subjects than fairly large diatoms. It will be well for me to describe step by step the procedure to be followed in this kind of operation. In the first place there is in practice a limit of magnification to be obtained with this device, or more accurately, there is a limit of angle for which it is available; and it will be well for the beginner not to use an objective of higher power than one inch. If medium powers are to be used, as say a quarter inch, then we require to cut down the angle of the objective by inserting in the back of it a disc with an aperture smaller than the back combination usually found in a quarter-inch glass. In fact, it is better to put such a stop into the back of any lens used for this purpose; if the lens has a focal length of one inch or less, and if it is of the usual construction. The condenser should be of considerable angle; I use with a one-inch glass a condenser of N. A. 1. A bull's-eye may or may not be used in addition to the condenser according to circumstances.

To start with, the object must be carefully centred, and the condenser centred and focussed without the black ground stop, and then the latter stop is to be inserted into the condenser which is fitted to receive it. The point is to get the object as brightly lighted, and the ground as black as possible, care being taken that the edges of the object are not blurred, which is a very common fault. It will probably be found necessary to alter the focus of the condenser in order to obtain this state of matters. The line to follow is to find and use the *smallest stop which will give the effect* I have described, viz., a brilliant object on a black ground. Of course, the exposure for this work is very much longer than when we are using direct lighting in the ordinary way.

There are occasions when it is useful to use a central stop or disc even when we do not require nor desire a black ground. I allude to certain occasions when we have to photograph extremely pellucid or highly refractive objects.



I have not yet fully worked out this method so as to be able to give definite suggestions for its use; but I have several times got, by putting into the condenser one of these stops so as to shut out the central rays, better renderings than I was able to obtain with the usual arrangement of the condenser.

There is a large field open to the photo-micrographer in the way of working with polarised light. For such work as the rendering of starches and other "polarisable" matter this line is of great value. I have not done much in this way myself, but so far as I went I found that beyond the skill and knowledge required for the examination of objects by polarised light the chief *crux* was that of exposure. As everyone knows who has worked with a polariser, the colours at certain positions of the prisms are very puzzling to photograph, if not impossible; but if suitable positions are available and are used, the exposures need not be so very long. The most important point for those who propose to devote themselves to any considerable extent to this branch of photo-micrography is to obtain prisms as large as possible.

In these chapters I have not pretended to treat the subject of photo-micrography in a "deeply scientific" way, but have tried rather to express myself clearly on elementary operations. If I have lightened the labour of any one beginning this useful and fascinating science, my object is attained.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER XI.

*Fig. 23.* In this subject Rubens displays all the easy fluency of a great master, who would consider such a design only as an amusement. The manner in which the figures are interwoven with each other, the mode resorted to, to assist the projecting and retiring points, and the velocity with which the whole appears to move, are all worthy of the artist's attention.

In "The Death of General Wolfe," *Fig. 24*, West has adopted the form of composition described in the last chapter



FIG. 23.—RUBENS.

to produce his mass of shadow in the middle of the group, and to bring it in contact with the light on the principal figure.

It is not only necessary that a group should have hollows for the reception of shadow, but also projections for the light to rest upon; it not only ought to possess a good general form in the outline which defines it, but the figures

must also be linked together in such a way as to lead the spectator in amongst them. They must appear to have room to stand upon, and every figure must keep his place in its relative distance from the eye; hence a form composed of a concave and convex line has been often adopted as the simplest and best, and possessing the greatest variety of advantages. That it is so generally used will cease to



FIG. 24.—B. WEST.

surprise us, when we find it applicable both to the regularity of Raphael and the irregularity of Rembrandt.

*Fig. 25.* "Cattle returning home in a shower." In this composition the principal light falls on the convex part of the group, and the depth of the shadow is assisted by the local colour of the objects placed in it. The goat in the foreground is connected to the rest by some white flowers of an elder bush, which cannot be expressed in an outline.

*Fig. 26* is a repetition of the same form.

Although we now think little of Benjamin West as an artist, his "Death of General Wolfe" was a famous picture in its time, and in one respect an "epoch maker," as I will presently show. Burnet has been content to say so little about the composition that it leaves me more space than usual in these notes, and a text of which I am glad to avail myself.

First of the composition. In an early volume of the *Photographic News*, Mr. Lake Price made a careful analysis of the picture which I cannot do better than quote:

"We observe the stricken hero prostrate in the centre of the picture, the sympathy of his officers and soldiers in the fall of their general being well expressed.

"The 'red-man,' hard of nerve himself, looks on with interest to see the resignation of the white chief to his fate; whilst the cry from the battle-field, 'They run! they run!' is perfectly shown by the panting figures on the right, and the more episodal one in the distance. The arms of the pointing figures cross each other, thus composing. The animated figure of the trapper or huntsman is most necessary, and gives the fact and sentiment to the still repose of the group immediately round the dying man. The grenadier, standing rather apart, judiciously separates the grouping, and prevents it being monotonous and crowded. The colours and their straight staff carry up and break the top line of the composition, and give value to the action.

"The advancing figure is prevented over-balancing by the crouching Indian beneath, which makes a mass with him. The balancing line of the Indian's gun cannot be dispensed with, though the artist has judiciously broken it by the intervening knee; nor the cap of the grenadier on the ground, which composes with the lines of his figure, and completes the group; whilst the dark hat under Wolfe finishes the circle, and gives distance to the lighter parts behind. The gun on the ground completes the base-line carried through the foreground. This is a most perfect composition, and should be well studied. We have first the story, told in a touching and distinct manner; next we have the main lines, traversing the subject horizontally, balancing with



each other; at the same time each figure either composes with its own base, or forms part of another mass, the whole arrangement, in its linear composition, being admirably susceptible of subsequent chiaroscuro."

Next as an epoch maker. It was with this picture that common sense in historical painting in England commenced. The picture was first exhibited in 1771. Before this period the most ridiculous absurdities were perpetrated in the costumes, not only in historical pictures, but in every other class of painting. The picturesque dress of the day was thought too barbarous for the sham classical taste of the time of James the First. This taste, revived by Verrio and Laguerre, was in the height of fashion when West commenced his "Death of General Wolfe." A portrait painter seldom allowed a sitter to appear in his own dress; if his subject were a lady, she was transformed into a shepherdess with a spud in her hand, tending sheep in Arcadia; if a youth, the distinction of sex was indicated by giving him a crook instead of a spud, and Pandean pipes. Men were dressed in armour of an earlier period, and it appeared to be a law as binding as those of the Medes and Persians, that in historical subjects the figures should be dressed in Greek or Roman costume, or not so much costume of the actual Greeks and Romans as a dress in which they were supposed to appear. If a battle-piece were represented, the king or general, "the noblest Roman of them all," was set in the front, bearing no possible proportion to the rest of the combatants. Thus, if the dubious costumes were to be believed, actions of Englishmen in the seventeenth and eighteenth centuries were performed by the people of extinct nations. But to make the thing still more absurd, although the dress was exchanged for Roman armour, the

of those who fell at Waterloo, and find that some of them, with that enthusiasm which disregards appearances or causes for uniform, actually went into battle without any clothes at all!

West, much against the advice of his friends, dismissed this pedantry, and restored nature and propriety to his noble work. Allan Cunningham, in his life of West, speaking of



FIG. 25.—JAMES BURNET.

this picture, says:—"The multitude acknowledged its excellence at once; the lovers of old art, the manufacturers of pictures called by courtesy classical, complained of the barbarism of boots, and buttons, and blunderbusses, and cried out for naked warriors, with bows, bucklers, and battering rams." A sensible man like Sir Joshua Reynolds was so blinded by the fashion of the time, that he entreated the artist to recollect the danger of an innovation which would incur contempt and ridicule, and urged him to adopt the costume of antiquity as more becoming the greatness of the subject than the garb of modern warriors.

Reynolds afterwards acknowledged, when he saw the completed picture, that the artist was right and said to a friend, "I foresee that this picture will not only become one of the most popular, but will occasion a revolution in art." At that time, truth of effect in art was so little regarded, that Garrick thought it right to play Macbeth in a full Court suit, and murdered Duncan, in a bagwig, with a dress-sword!

Figs. 25 and 26 are good forms of landscape composition which may be easily carried out by the photographer.

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**Correction.**—Mr. Henry M. C. Sprunt writes:—"I wish to call your attention to an error in the article on 'Instantaneous Photography.' In the description of a single lens the block of a wide-angle rectilinear has been used in mistake, and would be very misleading."



FIG. 26.—JAMES BURNET.

enormous wigs of the period were retained! Fine examples of this false classicality are to be found in London, especially in Westminster Abbey and St. Paul's Cathedral, where, by-the-way, there is evidence of a further decadence in artistic truth. The classic heroes of the early Georges were at least dressed, if dressed absurdly; but passing by Dr. Johnson and others who are wrapped in blankets, we come to the monuments erected to the memory



## Collotype Made Easy.

By A. VON SAVROFF (ST. PETERSBURG).

MANY professional and amateur photographers have desired to know a process by means of which they could cheaply and quickly reproduce their work; this I gather from the numerous questions addressed to me, and which caused me to undertake the work which has been interesting me for some time. I experimented with the chromium salts, and studied the phototype process, in order to see whether this could not be called into the assistance of the amateur photographer. After I had read the best books which have been written on the subject, I naturally tried to practically apply that which I had theoretically learnt; that is say, I tried to produce a gelatine cliché or matrix. Every trial failed, and I saw that in all the books which treated on this subject, much was not clearly stated or even entirely kept secret. I concluded, therefore, to make my own particular process, and now at last I have obtained good results. The actual procedure of the phototype process remains in the greater details, the same as it is shown in the books which treat of this question. I direct attention therefore to the little points which appear at first sight so trivial, but are of the greatest importance for the success of the thing.

Instead of plate glasses, which were recommended by many, I used ordinary thick mirror glass, with a slight matt surface on one side. Before coating the glass with the first substratum, it was rubbed for five minutes with a thick pad and finely sifted emery mixed with water, after which it was washed clean with running water and placed on a stand to dry. In order to remove any possible grease that might have adhered to the fingers or be caused by the traces of soap in the linen, the glass is washed in a solution of ammonia and water, wiped with tissue paper, and again placed up to dry, after which it is then coated with the following solution, which forms the substratum:—

Beer .. .. .	100 parts.
Water glass .. .. .	10 "

It is advisable, in order to obtain the beer free from gases, to pour it out into an open vessel several hours before use, and to allow it to stand. The water glass is then mixed with the beer in the above-mentioned proportion, and the mixture filtered through flannel, and used immediately; otherwise it spoils and becomes useless for the substratum. The glass is coated with it in an horizontal position, and is then placed vertically upon a stand or merely propped up against the wall. In about half an hour the glass is sufficiently dry to be coated with the second substratum. My experience has proved to me, however, that it is advisable to allow it to stand for several hours. I have obtained the best results after allowing it to stand for twenty-four hours.

Before coating with the second substratum, the glass is again washed with a solution of ammonia and water; and the surfaces of the glass may be lightly brushed with a soft brush, so that any possible dust may be removed. The glass is then placed in a drying box, the cover of which remains open. The following is the construction of the drying box:—It consists of a simple wooden box on legs. The bottom is made of thin zinc, which is fastened with nails. The cover consists of a wood frame, the middle of which is covered underneath with black calico, and above this with thin black cloth. A small round hole is made in the box for the thermometer. Wooden pegs in the box serve to hold the glasses. The dry current of air can be produced by a benzine lamp. The sensitive coating of chromated gelatine is prepared beforehand before the substratum. The ordinary procedure is as follows:—A certain quantity of gelatine is

cut into small pieces and washed clean in water, and allowed to swell up; impurities which may occur in the process of manufacture—for instance, chlorides or sulphuric acid—are thus removed. The gelatine is squeezed out four times in one hour. Then a definite quantity of water is added, and the gelatine and water placed in a water-bath of boiling water and brought to the boil, the mixture being constantly stirred with a glass rod till the whole of the gelatine is dissolved. When this has taken place a certain quantity of bichromate of potash is added and the solution mixed. In from five to eight minutes the solution is ready to use. It is filtered through flannel into a vessel which should stand in hot water. To the filtered solution ammonia is added drop by drop, the vessel being continually shaken, till the deep orange colour of the chromated gelatine appears bright green.

I must here draw the attention of my readers to the fact that in all formulæ which are to be found in books on the phototype process, the ordinary quantity of chromate salts is said to be from four to two per cent. My experiments have shown me, however, that the thinner, that is to say, the more transparent, the negative the less chromate salts should be used. If ammonia, however, is used in working, the printing continues longer than usual; in winter, on gloomy days, it need not be used at all. Too soft gelatine, which is found in the market, can be improved by adding from half to two per cent. of isinglass. The cooking of the gelatine or the coating of the plates can take place by candle or lamplight.

I may here give two formulæ for the chromated gelatine. I have obtained excellent clichés by the use of the gelatine manufactured specially for plates and the phototype process by Drenner and Co.

### FORMULA I.

Water .. .. .	1,000 parts.
Gelatine .. .. .	80 "
Potash bichromate .. .. .	16 "
Ammonia .. .. .	8 "

Or

### FORMULA II.

Water .. .. .	1,000 parts.
Gelatine .. .. .	100 "
Potash bichromate .. .. .	20 "
Chrome alum .. .. .	4—5 "

The chrome alum is first dissolved in water.

The temperature of the room plays an important part in coating the plates, especially in winter time, and it should be from 72 to 78 deg. F., otherwise the gelatine film becomes thick. The coating of the glass plate with the gelatine film should take place quickly, and one can evenly distribute the film all over the surface by means of a piece of clean paper. The coated glass is stood up to allow the excess of gelatine to drop off, and laid in the drying box, the cover of which is kept closed. The temperature is raised to 156 deg. F., and maintained regularly for 2 to 2½ hours. Then the lamp under the box is turned out, the plate allowed to cool in the box. 156 deg. F. I have practically proved to be the best temperature in order to obtain the right grain in the light sensitive chromated gelatine film. The higher the temperature is the greater and better becomes the grain, but the gelatine film acquires the tendency to give foggy, grey prints. Too low a temperature is unsatisfactory, since the bichromate of potash cannot sufficiently crystallise, and gives a series of black points on the picture. On the drying depends the number and appearance of the pulls.

After the cliché has remained for about two to three hours in the drying box, I expose it in the printing frame like ordinary light-sensitive paper. The time of exposure



is regulated by the actinism of the light and by the quantity of the chromate of potash in the solution. As a rule it continues from a quarter of an hour to six hours (in winter with a grey sky). In order to watch over the operation of printing one can open the half of the printing frame from time to time. In order to thoroughly control the operation through the ground-glass it must be wetted at the back. This process gives the possibility to continue the printing to a certain degree; still, one must remember that over-printing gives grey lights on the impressions, and, on the other hand, under-printing yields an impression without half-tones. When the printing is finished the printing frame is turned over and laid in the window; the wooden pressure back removed in order to give a supplementary exposure to the back of the film. This must be done (a) in order to isolate the substratum from the action of damp in the washing of the cliché, and (b) in order to reduce to some extent the relief of the cliché. In winter about two to five minutes' exposure is sufficient to effect this.

After this the plate is flooded with plenty of water, in a weak light, so that the soluble chromium salts of the film may be washed out. The water should be frequently changed (five or six times); in the last water the plate is allowed to lie for two hours. The cliché is now cleansed from air bubbles and placed vertically against the wall to dry. When correctly exposed, every detail is visible, with a matt surface on the glass, and the high lights appear glazed. Experience has taught me that the cliché prints much better when it is dried at the ordinary temperature of the room, which takes about six to eight hours in winter. It is risky for the film and the whole image to dry a cliché by the fire or in the oven.

When the film is thoroughly dry it is laid in a dish and flooded with the following solution:—

Water .. .. .	300 parts
Glycerine .. .. .	600 "
Hyposulphite of soda .. .. .	18 "

Care being taken that the whole of the film is covered. The plate should remain in the bath about an hour. The relief is much smaller, as one may notice by passing the finger over the surface of the cliché. The solution is poured off, and the surface carefully dried by means of a sponge or cloth, and as the film is very tender, it should not be rubbed, but carefully dried by merely laying the cloth on it.

If the cliché is finished, it may be rolled up with a roller and collotype ink. With quick movement of the roller, the ink is removed from the high lights, so that on the cliché the complete positive is visible. A cliché thus prepared is laid on to a piece of india-rubber and covered with paraffin paper. A piece of clean paper is fastened on a mask; over this is laid a thin bag of soft material stuffed with wadding. Satin is the best material for the bag, so that no structure is visible in the impressions.

A pressure of the copying press gives a good pull of the cliché. The first pulls of a plate are usually hard, because it is not yet sufficiently elastic. The more pulls one takes, however, the better and finer the prints. Finally, when the pulls show a grey tinge in the high lights, the plate is bathed in the following solution:—

Water .. .. .	100 parts
Glycerine .. .. .	100 "
Ammonia .. .. .	6 part

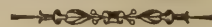
Washing the unexposed places of the cliché should be effected with a soft sponge; still, one should not press strongly on the glass, as the slightest injury to the light-sensitive film can spoil the whole plate. The washing is continued for one to two minutes; the moisture is removed as mentioned above. Then one can print again, and the impressions are visible with all details.

With regular and careful treatment of the clichés one can obtain a large number of pulls on any paper. Still, I must draw the attention of my readers to the fact that badly-sized paper absorbs a lot of moisture from the cliché, and therefore this requires a much more frequent damping. When one has finished printing, and it is desired to preserve the cliché, one proceeds as follows: The ink must be carefully rubbed from the plate with paper, and its surface covered with the following solution:—

Water .. .. .	500 parts
Glycerine .. .. .	150 "
Alcohol, 40° .. .. .	23 "
Potash alum .. .. .	1 "

Alcohol and alum are used to prevent the gelatine film spoiling. Glycerine is introduced into the bath to make the gelatine more elastic. A plate thus treated should be kept in a dry room. Before printing again, the plate should be laid in water for about ten minutes, then treated with the above-mentioned bath.

Although this process is quite simple and easy, it still requires considerable dexterity and practical knowledge on the part of the operator. And if the first pulls do not give perfect results the fault must be ascribed to deficient experience or some great blunder in the process. Such a phototype process needs neither dear salts nor costly machines, since one can work with the ordinary copying press. A used-up cliché is washed off in warm water, and again treated with emery, and can be used over and over again.—*Photographisches Wochenblatt.*



## Thursday Evenings at the Camera Club.

BY ONE OF OUR STAFF.

MR. ANDREW PRINGLE presided at the meeting on the 28th ult., the proceedings of which were a fine Olla Podrida, all the ingredients of which were very interesting. The interest was, however, mainly in the papers, which took so much time that there was little left for discussion. Mr. Davison showed a specimen of Benham and Froud's "Holiday" lamp, and of the London India-rubber Company's new focussing cloth.

Mr. Lyonel Clark undertook to read a paper from M. Leon Vidal on "A Combination Method of Carbon Printing and Staining for the production of Coloured Lantern and Stereoscopic Slides." He said he would like to read the paper in French, but Mr. Davison suggested that he had not the proper accent. After the laughter had subsided, Mr. Clark proceeded to read the paper, which said that the process consisted of obtaining a carbon image of a brown colour, but with very little admixture of the colouring matter; after the usual treatment, the tissue was dried and then placed in a solution of any aniline colour. That was for a single colour, but for a polychromatic effect it was necessary to have three separate negatives, one giving the red, one the yellow, and one the blue rays. From these negatives carbon transparencies should be made and stained their respective proper colours and then superimposed. At the conclusion of the paper, the Chairman said that M. Vidal had promised to send specimens, which he hoped would be on view at the following Thursday evening.

The next paper was one by Professor Burton on "A New Emulsion or Printing-out Paper." Mr. Davison was to read this paper, and it was suggested that he should read it in Japanese. He said it was not in that language, but he would ask their indulgence, as it was in the Professor's typewriting. In the course of the paper the Professor said he had often pondered over the fact that it was found necessary up to the present to salt and sensitize ordinary matt paper at different times, and at last he determined to make some experiments with a view to finding out if the two processes could be combined, by mixing the salting and sensitising solutions and applying them to the paper together. He found that this could be done. The result of the mixing was nothing more or less than a gelatine chloride



emulsion. It required no washing; was made by pouring one solution into the other, and was ready for use at once, and being liquid at an ordinary temperature it could be applied to paper or other material, either by floating or brushing over. It gave no gloss to the surface of the paper. The Professor had by no means confined himself to one formula, but has tried many, and had a fair amount of success with all; there is great elasticity in the process. In making the emulsion the quantity of gelatine must be kept as low as possible to prevent gloss on the paper, and it is necessary that there should be a large quantity of insoluble silver salt in suspension. If the gelatine be kept for a few days at a high temperature, such as that of fairly hot weather, it is probable that the salt would be found at the bottom of the bottle, but it can easily be re-emulsified. The paper treated with it will keep fairly well, as long as any other. For mixing, the two solutions should be heated to 110 degs. or 120 degs. F., and the silver solution is then slowly added to the other with much stirring, and the whole is filtered through a double thickness of cambric, when it is ready for use. It is best to coat the paper by floating for three or four minutes, and it is best to dry it quickly before a fire or near a stove. A quantity containing 400 grs. of nitrate of silver will cost ten or twelve sheets, so that the process is economical. The Professor prefers Clark's platinum toning to any other for the paper so prepared. The emulsion is easily applicable to wood, and he got very good results that way.

Mr. Lyonel Clark said that the process was entirely new as applied to matt-surface paper, though he had tried something of the same sort, but he never got a shadow of deep rich translucence. Judging from the specimens Prof. Burton had sent, and noting their great superiority over albumen prints, it was only reasonable to expect a great success for the new process. The Chairman agreed with Mr. Clark, and mentioned that there was a tendency to graininess in the shadows, but that might be due to fortuitous circumstances, and might be rectified by deliberate work. The process was very simple, the results were very promising, and all they had to do was to try it for themselves, and if they could only get as good results as those shown they might consider the process very successful.

The specimen prints sent were on Whatman paper without gloss, and of a very fine tone.

Mr. Woodward, of Birmingham, with the assistance of Mr. Stroh, then illustrated Schoppen's method of viewing lantern-slides stereoscopically. For this purpose two lanterns, side by side, were used, and two lantern-slides (taken stereoscopically) put in them. They were thrown on the screen and focussed accurately, and then in front of the right lens a red glass was placed, and in front of the left a green glass. Spectacles were provided for the audience, with a green glass for the right eye and a red one for the left, and on looking through them a decidedly stereoscopic effect was produced, the action being that the right eye saw only the red picture and the left the green. Votes of thanks having been passed to the demonstrators and readers the proceedings terminated.

## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

ACTING on a suggestion by Mr. J. M. Turnbull, of Rose Street, Edinburgh, the Council of the Edinburgh Photographic Society have resolved to recommend that the Photographic Convention of Great Britain be invited to meet in Edinburgh in 1892. The Council are of opinion that if the meeting of the Convention were to be held in Edinburgh, it would be the means of stimulating interest in photographic art, and they think the Society might resolve to give the invitation. In the event of the invitation being given and accepted, it would fall to the Society to perform certain duties, and while the expenses would not be great, there would be a certain amount of outlay, to meet which a guarantee fund would be necessary. They suggest that no single guarantee should be for more than £1. A motion is on the agenda of the meeting for Wednesday last (3rd inst.), proposing that the Society should guarantee, from its funds, a sum not exceeding £10 towards the expenses of the meeting of the Convention should it come to Edinburgh. While agreeing that it is desirable that the Convention should be invited to Edinburgh, I am not sure that it falls to the Society to do the whole of the

work in connection with it. There are other photographic bodies in the district who might be willing to bear a hand in whatever is to be done, among others the Edinburgh Photographic Club, the Edinburgh University Photographic Association, and the Leith Amateur Photographic Association. Before giving the invitation, these bodies might be approached, and asked if they are willing to undertake any of the duties or responsibilities attaching to the proposal. If that were done, and the other bodies agreed, the proceedings would, doubtless, be more pleasant and interesting because of the appearance of harmony which such a step would indicate.

Notable photographs are sometimes taken in Edinburgh, than which few cities offer better advantages. The latest is that of the Right Worthy Grand Lodge of the Independent Order of Good Templars, which met in the city last week. There were representatives from all the English-speaking countries in the world, and it was thought desirable that a picture of the gathering should be secured. This was effected by means of photography in that most picturesque of all public gardens, the West Prince's Street Gardens. With the Castle, perched on its lofty rock for a background, a striking photograph ought to be the result.

Mr. W. Crooke, Prince's Street, Edinburgh, photographed the Lord High Commissioner to the Church of Scotland (the Marquis of Tweeddale) and party, in the quadrangle of Holyrood Palace, on Saturday last.

The members of the Leith Amateur Photographic Association held their fifth meeting for the present session on the evening of Tuesday week, Mr. Thomas W. Dewar in the chair. This society is always fortunate in having specimens forwarded to them by manufacturers, scarcely a meeting passing at which some novelty is not on view. At this meeting the articles shown were the new method of placing titles upon photographic prints by Mr. A. Gray, Snow Hill, London, to which the name of "Nameit" has been given; and the other was the London Rubber Company's waterproof focussing cloth, which is recommended as being, in addition to its ostensible purpose, suitable for protecting the camera, and as a shoulder cape, but whether it is equal to all three things at once is not stated. As most photographers have dust and waterproof cases for their cameras, a focussing cloth which could be used also as a cape might be handy, and the two things would be sufficient without asking it to do further duty. The technical business of the evening consisted of a paper by Mr. W. M. Smith, on "Copying," which was a sensible production. There will be no meetings of the Association during June, July, and August.

## The Picture Galleries.

EXHIBITION OF THE EARLY ENGLISH  
MASTERS' PICTURES IN OIL.

(By "LOITERER.")

At the Dowdeswell Galleries there is an extremely interesting collection of excellent examples of oil paintings by Sir Joshua Reynolds, Thomas Gainsborough, George Morland, and other representative Early English artists. This exhibition forms an admirable contrast to a previous collection shown at these galleries of works by French Romanticists. There is no necessity to-day to praise such pictures as "Dedham Village" (18), by John Constable—as well might we paint the lily. "The Mill" (37) is one of Gainsborough's best in this gallery. Sir Peter Lely is not at his best in his single contribution of "Nell Gwynn" (73). Joseph Wright is well represented in "The Shoeing Forge" (82). George Morland exhibits, in the thirty-two pictures by him, all the varied excellences which have gained for him such a valuable reputation. Every one of the 154 pictures shown in this collection merits a careful study, as exhibiting the style of oil-painting which distinguished the period of 1750-1850. A word of special commendation must be accorded to the admirable catalogue, which contains brief sketches of the artists whose work is exhibited on the walls.

**Tynemouth.**—Mr. T. O. Mawson, of 12, Percy Park Road, Tynemouth, writes us that he keeps all photographic chemicals, plates, and paper in stock. Many of our subscribers visiting the town, Cullercoats, Whitley, and the surrounding district will, we have no doubt, take an early opportunity of paying Mr. Mawson a visit.



## Apparatus.

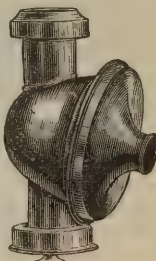
### THE "HOLIDAY" CANDLE LAMP.

YET another photographers' lamp; not quite so wonderful as Aladdin's, but still sufficiently striking to attract, as it is sure to



OPEN FOR USE.

do, considerable attention amongst amateurs, especially those who travel much and use their bed-room as a dark-room when the exposures of the day are done. The lamp (of which we give two excellent illustrations) is substantially made of brass, lacquered, and is so constructed that it closes up into the smaller space with the removal of only the base; the latter takes off and fits easily over the glass, thus forming an admirable protector for that most delicate part of the affair. The tube containing the candle simply slides right up into the body of the lamp, and it is ready for a voyage from China to Peru. Candles are used, thus absolutely avoiding the leakage of oil or grease of any kind, and as the whole of the inside of the lamp is silvered, forming a parabolic reflector, a powerful light is obtained. The light, too, owing to the peculiar shape of the lamp, is thrown downwards and thus escapes the eye, which, in consequence, is not so soon fatigued as with the ordinary form of lamp. In addition to the glass front, coloured (which, by the bye, is not ruby), there is one of white glass, so that the lamp can also be used for a lantern lecture or for ordinary reading. Special candles are supplied, at one shilling the half-dozen, which will burn for three or four hours; the lamp itself sells at 10s. 6d., and is remarkably cheap and likely to be in great demand. The sole manufacturers and patentees are Messrs. Benham and Froud, Ltd., Chandos Street, Strand, W.C., and the lamp will be obtainable of all photographic dealers.



CLOSED.

### THE PHOTO-AUTOCOPYIST.

This is an apparatus which can be used for producing ink copies of photographs, and, judging from the specimens before us, very successfully, half tones being exceedingly well reproduced. The process is an adaptation of the bichromate of gelatine process, and is comparatively easy working. The patentee claims:—"A simple photo-autocopyist gelatine sheet replaces the formerly bichromatised glass. It is sufficient to soak it for a few minutes in a bichromatic solution of 3 per cent., to dry it in the dark-room, and to expose it to the light in a printing frame, underneath the picture to be reproduced, in the same way as you would take a copy on albumenised paper. When it is complete, the photo-autocopyist sheet must be soaked in ordinary water, until the bichromate has entirely dissolved. The sheet thus prepared will constitute the printing surface, and enable the photographer to take from it thousands of copies, which, as regards neatness, will compare very favourably with the best photographic proofs. The photo-autocopyist sheet is stretched on the grooved frame, and inked with the roller, after which the copy is produced under the copying press. These copies can be taken on any kind of paper or texture. From the photo-autocopyist sheet further indefinite numbers can be taken at intervals, even after some years." The sole licensees are the Americo-European Trading Co., Ltd., 72, London Wall, E.C., and the prices of the apparatus are, for 3½ by 4½, £2 15s.; 5½ by 7½, £3; 7½ by 9½, £3 10s.; 9½ by 12, £4; 12 by 16, £4 15s.

### THE "MARVEL" HAND-CAMERA.

This is another cheap camera, the price being only ten shillings, which is made for use with dark slides. It is for quarter plates, has a good view lens, and an ingenious shutter which can be used for either time or instantaneous exposures. The camera is well put together, covered with black American cloth. It is more than a toy.

## Holiday Resorts and Photographic Haunts.

### SKEGNESS (LINCOLNSHIRE).

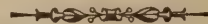
THIS popular little seaside resort is situated on the shores of the Wash, about 20 miles from Boston by rail, and is easily accessible, being the terminus of a branch line of the Manchester, Sheffield, and Lincolnshire railway, who find it to their interest to foster the place, and therefore frequently run cheap trips, besides having for a branch a very fair ordinary time table. By ordinary trains passengers change at Firsby for the local train. Being situated on the borders of the "Fens" the surrounding country is flat and somewhat uninteresting, though the searcher of the picturesque would find many little bits well worth a plate, but to the ordinary photographer the chief attractions will be found in the wide, firm, far-reaching sands, the crowds of trippers, the peculiar boats, and equally peculiar way of embarking passengers thereon, and its long iron pier reaching across the sands to below low-water mark, all of which furnish material for successful "snap shooting," especially as the light is in a very good direction for such subjects and from the absence of smoke is of an unusually actinic quality.

To the student of ecclesiastical architecture the churches of this and neighbouring parishes will furnish several excellent examples of what are, I believe, known as "flint" churches. (They are noticeably squat in appearance with very short square towers which look as if they had been cut off short.) Skegness "old" church (now disused for public worship) is a fine example of this class of church architecture, and it is best taken from the south or south-west, with morning or afternoon light. Other churches in the neighbourhood well worth a plate are those of Croft (three miles from Skegness), Burgh (about five miles), Irby (a "flint church," about one and a half miles from Firsby station), and Winthorpe, which is about two or three miles from Skegness. Of these, Burgh church is far the best photographically, though it is difficult to get a satisfactory view of the outside as a whole; owing to the numerous trees in the churchyard, the best point is nearly due north at the corner of the churchyard, but as the best time to take this view is about 6 or 7 a.m. if the sun is shining, not many would care to try it, especially as, owing to the view being uphill, the apparent perspective of the church is very peculiar. The tower is a high square one, and from its top it is said twenty parish churches can be seen. The interior is, however, well worth taking, during the latter of the afternoon; the old carved oak pulpit (over 200 years old), the font, the east end lectern, etc., all being well worth separate plates, also the general view of the church from the west end. It is well lighted too, but backed plates should be used, on account of the windows.

A good pedestrian could readily take most of these churches in a day's excursion, starting from Skegness in the morning to Croft (three miles), taking this church from the S.E.; there is only one view of it to be had as a whole, so it is not likely to keep the photographer long, as there is little inside worth taking. From Croft to Burgh is two miles, and Burgh church is in plain sight all the way, so it is impossible to miss it. There are three good inns at Burgh, at any of which refreshments can be obtained. From Burgh to Irby, about two and a half miles across the fields; Irby church is only worth one plate, the view being taken from the S. or S.W. From Irby to Firsby station is about one and a half miles, and thence by train back to Skegness. The vicars of the respective churches will doubtless readily give permission to photo the interiors if applied to Burgh church is, I think, always open. Croft vicarage is quite close to the church.

There are several photographers at Skegness, and no doubt plates and chemicals, also the use of a dark-room could be easily obtained.

The light in this part of the country seems very actinic, so care should be taken not to over-expose, and the tripod used should be firm and steady, as there is generally plenty of wind at Skegness.



**A Charming Worcestershire Nook.**—Messrs. S. H. Brookes, of Cheltenham, send us a little pamphlet, "Picturesque Broadway," a place to spend a quiet holiday. A perusal of this little book (price threepence) satisfies us that the camera would be a fit companion in such a place.



## Reviews.

*Painting on Glass for the Magic Lantern.* London: Messrs. J. Barnard and Co., 19, Berners Street, London, W. 1s.

This is a very useful and practical little handbook upon painting on glass, a subject which the average run of workers in lantern slides knows nothing about; he cannot therefore do better than qualify himself by perusal of the manual, which treats of—painting on glass in water colours, painting on glass in oil colours, phantasmagoria slides in oil or water colours, concluding with a few useful hints upon “The magic lantern, and how to use it.”

*A Class Book on Light.* By R. E. STEEL, M.A., F.C.S. London: Methven and Co., 18, Bury Street, W.

A book on light is always acceptable to the student in photography, and the one before us is of an educational character, to give, as the author says in the preface, “the student clear and accurate conceptions of the elementary principles of optics.” He apologises for the *few calculations* “which those who do not know something of trigonometry may be unable to follow;” but the author adds, “such students may accept the results obtained without seriously interfering with their progress in the subject.” The book is divided into eleven chapters, viz.: Nature, source, intensity and velocity of light—Reflexion from plane surfaces—Reflexion from curved surfaces—Single refraction at plane surfaces—Refraction at curved surfaces, lenses—Dispersion—Optical instruments—The eye—Interference—Diffraction—Double refraction and polarization—Interference of polarized light. This will be sufficient to show that the subject, “light,” is very fully covered. The diagrams illustrating the writer’s remarks upon the lantern and the photographic camera are incorrect. In the former the arrangement of lenses is not such as is in practical use, and in the latter it is difficult to find where Mr. Steel has found the combination which he illustrates. The book is not, of course, written as a photographic handbook, but we cannot help thinking that the author will do well when issuing another edition to pay more attention to photographic optics, and bring his examples of the lantern objective and the photographic lens up to date. Questions are set at the end of each chapter, and a very large amount of useful knowledge upon light and optics will be acquired if the reader carefully sets himself to answer the questions. The book is one of “Methven’s Science Series” (2s. 6d.); several have been published, and others are in the press.

## Quarterly Examinations in Photography.

**Question 23.**—What is the cause of (a) want of vigour (b) mealy prints, (c) white marbly marks, (d) black marbly marks, (e) black specks in albumen prints.

**ANSWER.**—The most probable cause of all or any of these is defective negatives, but assuming the negatives perfect—

(a) Want of vigour may be due to a want of silver in the sensitizing bath, to under-printing, or too prolonged fixing and washing.

(b) Meakiness is caused by the absence of sufficient absorbent to take up all the chlorine set free by the action of light. This free chlorine attacks those particles of darkened silver-salt next it, bleaching them and bringing them back to their original state. Fuming with ammonia provides the necessary absorbent.

(c) White marbly marks are caused by a very weak bath, the water dissolving the albumen before the nitrate of silver has time to coagulate it. They may also occur through imperfect albumenising.

(d) Black marbly marks. A scum of oxide of silver formed on the top of the bath when left exposed to the air probably causes these; it ought to be removed with a strip of blotting paper before commencing work.

(e) Black specks. These are probably defects in the paper, but may be due to dust settling on the albumen before it is dry, or the print may have toned face up. S. N.

**Question 24.**—How would you set to work to reproduce an oil painting, the colours of which have to be as far as possible correctly rendered? What light would you employ—sunlight, diffused light, or lamplight?

**ANSWER.**—Lamplight, owing to its comparative weakness in blue rays, is to be preferred, using several lights (to equalize illumination), assisted by large orange-coloured reflectors.

First measure the picture and find the amount of reduction

necessary, then (the focus of the lens, which must be a rectilinear being known) calculate the conjugate foci, and place the camera and picture in their respective positions with the ground glass of the former exactly parallel with the latter. Insert the stop (a small one), and adjust any difference of focus (to do this exactly it may be necessary to remove the picture and focus on a light which must be held in the same plane as the surface of picture will occupy), and expose, using a slow plate rendered orthochromatic by erythrosine if there is much green in the picture, or by cyanine if strong in reds.

Develop with a developer weak in pyro so as to keep down the contrasts.

The conjugate foci are found by multiplying the equivalent focus by the number of times plus 1 which give the greater distance, while the answer divided by the number of times gives the second distance; for example, using a 10 in. lens to reduce three times—

Multiply 10 by (3 + 1) = 40 in., the distance from the picture to the stop.

Divide 40 by 3 = 13½ in., the distance from the stop to ground glass. S. N.

## Societies' Meetings.

**Brighton.**—The Brighton Photographic Society made an excursion to Lindfield on the 30th ult. Only a few members participated in the trip, but those who went were favoured with beautiful weather, and had a very enjoyable day. After taking several views they had tea together at the Railway Hotel, Hayward’s Heath.

**Brixton and Clapham.**—On the 23rd ult. nineteen members of the Club travelled down to Bexley, by invitation of the President, Mr. A. R. Dresser. After several shots at the church, farmyard, etc., the whole of the cameras belonging to the party were levelled at some sixty or seventy cows, which had gone down to water at the river. This over, a photograph of the party was taken. The members then roamed about, some in the farm, others by the river, until six o’clock, when all sat down to a substantial tea, which had been provided by the President, and after a long afternoon was thoroughly appreciated. The weather, a contrast to last year, was beautiful, and a total of 170 plates were exposed.

**Dukinfield.**—An ordinary meeting was held on the 26th ult., the President, Mr. J. T. Lees, in the chair. The Hon. Sec. exhibited a sample of waterproof focussing cloth. The President made a few remarks on the arrangements for weekly demonstrations and outdoor meetings, and urged on the members the advantages to be gained by attending the same. Mr. Shirley explained his apparatus for enlarging, etc. The President explained, with the aid of diagrams on the screen, methods of enlarging by daylight and also by artificial light. Enlargements were then made on plates by the President, and on paper by Mr. Shirley, which were very successful. A vote of thanks to the demonstrators brought a very interesting meeting to a close.

**Faversham.**—The outdoor excursions of this Society were inaugurated for the season on the 26th ult., by a journey to Chilham. Through the kindness of Colonel Hardy the members were admitted to the fine grounds surrounding the castle, where many objects worthy of attention were met with. A number of plates were exposed in the village and neighbourhood, and being favoured by the weather it proved to be the most successful and enjoyable excursion the members have had.

**Glenalmond.**—The fortnightly meeting was held on the 30th ult., the President in the chair. After some business had been discussed and settled, the President remarked that the club had to decide upon the subject for a photograph for which a prize would be given by one of the masters of the college. After some discussion it was settled that the prize should be given for the best set of three photographs of river or burn scenery within walking distance. It was left to the Committee to bring up further details about it by the next meeting. The meeting then became general to inspect some photographs shown by Messrs. Maxwell, and some instantaneous ones by the President. The meeting then adjourned till Saturday, June 13th.

**Hackney.**—The ordinary meeting was held on the 28th ult. Mr. Beckett presided. The new system recently brought into operation worked well, as there was plenty of discussion, the work of Messrs. Sodean (microscopical work), Grant (Fry’s naturalistic paper), S. H. Barton (toned ditto), Gregg (hand-camera work), causing much comment thereon. The following excursions were arranged for the next two months:—June 13th, to Dorking; 27th, Waltham Cross; July 11th, up the Thames; and 25th, to Hampton Court. Mr. Beckett then gave an excellent paper on “Elementary Work,” and gave as his preference a quarter-plate camera, single lens, one and a half or twice length of the plate, half-plate tripod for quarter-plate camera to ensure greater rapidity, and the slowest plate that could be obtained. For development he preferred pyro, and gave as an excellent formula—(A) 1 oz. pyro, 3 oz. sulphite soda, 16 grs. citric



acid, water to 16 ozs. (B) saturated solution carb. soda, with sal ammonia, or roughly for saturation, 6 ozs. sulphite to 1 sal ammonia. For use—A, 10 minims; B, 1 drachm; water, 1 oz. He had found a mixture of eikonogen and hydroquinone work well, and very nearly equal pyro. For exposure the best method was by making notes of those plates which had been exposed, and comparing. Dr. Roland Smith said he had found a good way of bringing out under-exposed plates was by first using pyro and then following with quinol. A lengthy discussion then ensued, in which Messrs. Grant, Gosling, Dean, Gregg, Barton, and others took part.

**Holborn.**—Anybody strolling into the Holborn Camera Club room on the 29th ult. would have been taken aback to see the large number of hand-cameras pointing at him as he entered the room. But the "dreaded click" did not take place, and, gaining confidence again, he doubtless would go in and examine the instruments. Owing to the bad weather on Friday, the show, however, was not so good as had been expected. Many manufacturers did not show their hand-cameras. The novelty of the evening was, however, a stereoscopic hand-camera, shown by Mr. Raphael, which, by a sliding arrangement of the front, could be used as a quarter-plate as well as a stereoscopic hand-camera. Mr. Arthur R. Gowing was elected a member of the Club.

**Kendal.**—The monthly meeting was held on the 27th ult., Mr. Frank Wilson in the chair. After the transaction of business matters, the chairman read a paper on "Photographic Work for the Arts and Crafts Exhibition." The paper dealt with the prizes offered in this subject, but more especially with those confined to amateurs. Mr. Wilson had coloured a map showing the Kendal six miles radius and the confines of the exhibition area. Much information regarding "bits" of landscape and river scenery was given, whilst the old buildings of Kendal were described. The question of rules was again deferred. Field meetings for both Thursdays and Saturdays were arranged.

**Liverpool.**—The fourth ordinary meeting of the twenty-eighth session was held on the 28th ult. Mr. Paul Lange presided, and there was a numerous attendance. The following gentlemen were unanimously elected members of the association, viz., Messrs. Thomas Rome, Anthony Dod, John Wells, and F. E. Patchett. Mr. Paul Lange reported on the excursion to Chirk, which took place on Saturday, 9th May. Twenty-one members turned up, and although the day was dull some good photographs were taken, and a very enjoyable time was spent in the castle and neighbourhood. The Hon. Secretary exhibited the London Rubber Co.'s new waterproof focussing cloth. Mr. B. Boothroyd, Chadwick's new hand-camera, fitted with Swift's special lens working at  $f/4$  ( $4\frac{1}{2}$  inch focus). Dr. Manton, president of the Sheffield and District Optical Lantern Society, then proceeded to give a most interesting paper and demonstration on the "Carbon Process," and on the motion of Mr. B. Boothroyd, a hearty vote of thanks was accorded to that gentleman for his lecture, and the proceedings terminated.

**Lowestoft.**—A meeting was held on the 29th ult. Mr. W. Stringfield, the chairman, presided. Negatives, prints, and slides were exhibited by Mrs. J. Lee Barber, Messrs. Escourt, J. Rose, A. M. Smith, W. R. Smith, and others, and discussions thereon followed.—The stereoscopic "snap shots" of different parts of London, taken from the top of an omnibus by Mr. Escourt, were highly appreciated, the lantern slides of Old Lowestoft taken from negatives made forty years ago, exhibited by Mr. James Rose, were the feature of the evening, and Mr. A. M. Smith's slides of the neighbourhood, principally Oulton, are works of great merit. Mr. W. R. Simson also exhibited a few nice photo. micro. slides.

**Richmond.**—At the meeting on the 29th ult., Mr. Ford presided. The subject for discussion was "Finishing and Mounting Prints," which was pretty thoroughly thrashed out.

**Sheffield Camera Club.**—A general meeting of the above club was held on Wednesday, May 27th, when an exhibition of about 180 prize slides, kindly lent by the Editor of the "AMATEUR PHOTOGRAPHER," took place. There was a good attendance of members, who highly appreciated the great variety of views put on the screen.

**Sydenham.**—An ordinary meeting was held on the 26th ult., the President in the chair. Mr. T. W. Rumble reported that he and Mr. Gray had attended the meeting of delegates at the rooms of the Photographic Society of Great Britain, to discuss the Federation Scheme, and that it had been decided that nothing should be done until the Parent Society had brought forward its scheme of affiliation or had abandoned it altogether. Mr. Reynolds read a paper on "The Dark-room and its Appliances." It was a most carefully prepared and studied paper, with a number of diagrams showing the best means of ventilation, lighting, and the arranging of the dark-room. These were handed round for examination. He was of the opinion that electric light was the best light for the dark-room, through at present that was out of the question for most amateurs. It was announced that the first summer outing would take place on June 6th, and members were requested to inform the Secretary of their intention of joining.

**The Phot. Soc.**—The monthly technical meeting was held on the

26th ult., Capt. W. de W. Abney, C.B., R.E., F.R.S., in the chair. The Chairman read a communication from Mons. Paul Nadar on a magnesium lamp that could be used either to give a flash-light or to give a steady magnesium flame. He also read a note upon Halation, by Mons. Nadar, and exhibited some specimen prints from negatives taken with this light. Mr. Addenbrooke opened the discussion on the "Influence of Development on Gradation."

**Tunbridge Wells.**—The members of the above association held their first excursion of the season on the 30th ult., when, by the kind permission of Mr. Edward Hussey, they were enabled to pay a visit to Scotney Castle. The old castle was a castellated mansion of considerable extent, surrounded by a moat, and appears to have been occupied by a family of some consequence, Walter de Scotney, Steward of the Earl of Gloucester, holding it in 1258, and his descendants continuing in possession of it until the time of Edward III. In the middle of the fifteenth century it was in the possession of the Darell family, whose ancestor was one of the followers of William the Conqueror, with whom it remained till the year 1774. It was a square building, having a round machicolated tower at each corner, with intermediate buildings; one of these only remains, that at the south entrance. The lantern on the top is evidently of modern date as compared with the original building. A portion of the gate-house is still remaining, and also part of an ancient mansion, the latter of which was designed by Inigo Jones. The entrance to the principal rooms appears to have been in the first court; the stone steps leading to it and the door are yet standing. In the inner wall at the end of the kitchen, nearly at the top of it, is a small aperture which is thought to have been a private entrance to a closed or secret place in the lower part of the building. It is said this was one of the seats of Archbishop Chicheley, and from the spacious moat it is easy to imagine that Scotney must in the olden time have been a right lordly dwelling. Coins have been found, and in cleaning out the moat some broken glass bottles were found at the bottom of it with all the hues of the rainbow upon them, evidently produced by the qualities of the water. The modern mansion stands on high ground overlooking the old ruins and only a short distance from them. The architect was Mr. Anthony Calvin, who was celebrated for his designs in the Tudor style of architecture. Over the principal entrance in the west front are the family arms richly carved in stone with the motto "Vix eii nostri voco," and underneath, in old English characters, is the following appropriate couplet:—

Health and happiness attends  
The coming and the parting Friends.

In the gable, over the kitchen window, also in old English, is the following:—

Upon ye settled Rooke thy building surest standes;  
Away it quickly weares, that resteth on ye sandes.  
Dame Virtue is ye Rooke that yeldes assured stay.  
Dame Fortune is ye sande that skowreth soone away.

The owner hospitably invited the members to tea. The party returned through Frant, highly delighted with their excursion as to weather, drive, and unexpected scenery, and their cordial reception.



**Compound Sulphokinone Developer.**—The Fry Manufacturing Company, 5, Chandos Street, W.C., and Kingston-on-Thames, have sent us samples of their "Sulphokinone Developer," which is made upon a thoroughly reliable formula, and in our hands has given first-class results. The developer is in two solutions, which, when the plate has been correctly exposed, should be used in equal parts. When over-exposed, the proportion of the A solution is increased, and when under-exposed, the proportion of B solution is increased. The best results are obtained with a correctly exposed plate, and when using the developer in equal parts. The developer may be used several times until the developing power is exhausted. The tourist will find Messrs. Fry's developer very handy; it is packed securely, and can be sent by post safely.

**The Universal Camera.**—Mr. A. Brooker, the very energetic secretary of the Hastings and St. Leonards Photographic Society, has sent us a description of his Universal camera, which appears to have many advantages, viz.: Outside measurement,  $8\frac{1}{2}$  by  $6\frac{1}{2}$  by  $5\frac{1}{2}$ : weight with three dark slides,  $3\frac{1}{2}$  lbs.; only one projection; the milled head for focussing made to take any lens from  $3\frac{1}{2}$  to 8 ins. equivalent focus. Has a shutter always ready, behind the lens, which can be used or not as required; all the movements of the ordinary camera, including focussing screen, rising and falling front for architectural or street views, and dark chamber doing away with the use of a focussing cloth. A roller slide can be adjusted. The dark slides pack inside the camera, and the whole locks up. There are many other advantages, and our readers will do well to send to Mr. Brooker, 52a, Robertson Road, Hastings, for his prospectus. Visitors to Hastings will find at Mr. Brooker's an excellent selection of photographic materials and many specialities.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

**4727. Mounting Solution.**—How can Marion's mounting solution be diluted for use when it becomes too thick? Will the addition of methylated spirit do, or if not, what else?—**C. R. F.**

**4728. Wide-Angle Lens.**—Would you kindly tell me the best wide-angle lens to cover a  $\frac{3}{4}$  by 5 plate for photographing in confined places? Is a portable Euryscope wide enough?—**PRIM.**

**4729. Eastman's Films.**—Will someone please tell me their formula for developing Eastman's films (extra rapid), as what I use is so very slow?—**H. I. C.**

**4730. Mounts.**—Can any one tell me the address of a house in London where I can get a variety of mounts to suit photographs all shapes and sizes?—**H. I. C.**

**4731. Retouching.**—Will some one kindly tell me how to darken hair which prints too light a colour? I have tried the effect of scratching the film on the negative, but that is not successful.—**H. I. C.**

**4732. Dark Room, Earl's Court.**—Could any one tell me where it is possible to develop plates whenever desired in the neighbourhood of Earl's Court, as where I am staying there is no accommodation? Is there any society in that part; if so, which? I would wish to have access to the dark-room any time.—**N. M. H.**

**4733. Intensifying.**—Could any of the readers of the **AMATEUR PHOTOGRAPHER** inform me the safest solution for intensifying negatives? I have been informed that sal ammoniac  $\frac{1}{2}$  oz., bichloride of mercury  $\frac{1}{2}$  oz., and water 5 oz. make a very good solution for intensifying negatives, but I have heard that it is not fit to be in any amateur photographer's hands, unless he or she knows well what they are using and how to use it, as it is a most dangerous solution. I have been to chemists for bichloride of mercury (for the above solution) who I know quite well, and when I informed them that I wanted  $\frac{1}{2}$  oz. they said the least drop would kill a person. They asked me a number of questions, etc., for information, when they refused to sell me any; they said they would not sell any to any person unless they had ample information. I do not want any solution with quite such dangerous chemicals in, but one which when I have used I can be more sure of being alive the next day than I could if I used the above described solution (provided what I was informed is correct). A hint will oblige.—**W. H. ELLIS.**

**4734. Films, Exposure for in Norway.**—A lady who is going to Norway wishes to know if it is advisable to take films, if so, what kind, and an average exposure with R. R. lens, Kouch's French?—**INSTOW.**

**4735. Photographical Society, York.**—Will the Secretary of the York Amateur Photographic Society communicate with "ALPERUM" (address with Editor)?

**4736. Exposures.**—Can any one tell me what is the minimum and maximum speed of the Automatique shutter? It is not in the list in the "Annual." I should also like to know what is considered to be the shortest possible time exposure with the pneumatic ball. It seems rather under a quarter of a second. Is any shutter to be had that works after a few minutes, so that the photographer might have time to introduce himself into the picture, where other figures cannot be got?—**J. C. OLIPHANT.**

**4737. Quick Printing.**—In reply to a question on

this subject, I see in "Amateur Photographer's Annual" that ferri-cyanide paper is recommended from Mr. Gutz, Buckingham Street, Strand. But on enquiring about this paper I find it is only to be had in a roll of 20 yards long and 204 metres wide! Rather a large order for an amateur. Can any of your readers tell me whether this same paper can be bought in cut sizes? The paper is No. 15, and the print would be sepia on a duck-egg green ground.—**X.**

**4738. Dark Room.**—Will some one please report on the dark-room manufactured by Davenport and Co., of Camberwell, price 30s., as advertised in **AMATEUR PHOTOGRAPHER**? Is it thoroughly well made and reliable in every respect? The chief thing is, is it perfectly light tight? Also is it easily put together?—**DEEMSTER.**

**4739. Gold Chloride.**—Can any reader kindly inform me through the medium of the **AMATEUR PHOTOGRAPHER**, in how much water I ought to dissolve a 15 gr. chloride of gold tube, and also how long the solution will keep?—**DEEMSTER.**

**4740. Camera on Bicycle.**—I wish to know whether I could carry a half-plate camera on the ordinary fixed luggage carrier of a safety bicycle, or if it would be apt to get damaged by the vibration. I have a spring carrier also, but when touring I intended to carry plates and the double dark slides on it, the camera to go on the fixed carrier. I shall be obliged if some brother-cyclo-photographer would kindly help me in this matter.—**A. M.**

**4741. Matt-Surface Paper.**—Can any reader suggest a printing-out paper that will give various tones (say from brown or purple to black), matt-surface preferred? I have been using bromide for some time, but find that many of the smaller details are quite lost and there is difficulty in printing in clouds, etc. There are many papers, I know, advertised, but I have not sufficient time to experiment, and thought some kind friend would be able to say from experience. I want a paper to answer for all purposes so that I can get warm or cold tones at will. Please give toning formulae.—**MERCUR.**

**4742. Copying.**—I have had occasion lately to copy some photographs, and have done so in daylight, but find on development of negative that the grain of paper shows so distinctly as to give the subsequent print a mottled appearance. Can this be obviated by copying by lamplight, or any other way?—**MERCUR.**

**4743. Good Half-Plate Lens.**—Can any fellow reader tell me where I can purchase a good half-plate lens (second-hand would do) for groups, views, portraits, and outdoor work, so that I can pay for it by instalments?—**BEGINNER.**

**4744. Wiesbaden.**—I am going to spend a few months at the above and intend taking my camera, and would be very much obliged if any of your readers could give me any information as to whether I shall have any difficulty with the customs or in photographing in the neighbourhood, and where will I be able to get English plates?—**UTTER STRANGER.**

**4745. Bromide Printing.**—Will some bromide worker kindly say why my prints turn a slaty grey instead of a rich black (Eastman's slow paper)?—**COPTIC.**

**4746. Beige Lamp.**—Will any brother amateur kindly tell me where I can obtain one, or if a No. 5 Bray's gas burner would do, and oblige.—**ENLARGER.**

**4747. Photographs Wanted.**—Where can I get photographs of the following?—(1) The recess in the wall formerly used as the Easter sepulchre in Heekington (Lincoln) and Patington (Yorks); (2) the altar tombs of the Black Prince at Canterbury, and the Earl of Portland at Winchester; (3) the oak altar tombs at Boxted, Gayton (Suffolk), and Little Horkeley (Essex); (4) the altar tomb of Henry, Lord Marney, at Layer Marney, Essex, showing the small altar attached. And of any curious old altars, wood or stone.—**C. F. YONGE** (address with Editor).

**4748. Dark Room.**—A lady amateur requires the use of a dark-room near the Marble Arch, and will be glad to hear from an amateur or professional photographer or dealer who could let her have the use of a dark-room. Address with Editor.—**WYNDHAM.**

**4749. Scotland.**—For a person who has travelling facilities on whole of Caledonian Railway, but who is a stranger to Scotland, what places thereon would be most central and desirable for a fortnight's holiday in July, from which daily photographic excursions could be taken? Moderate tariff a necessity.—**CALEDONIAN.**

**4750. Bellows, Cracking of.**—Is there a way to prevent camera bellows from cracking, that have been coated with shellac varnish?—**W. BECK.**

**4751. Paris.**—Will someone kindly state a good time for visiting Paris, as regards fêtes, etc., this year, a good hotel, or can Cook's be recommended, the principal views to photograph, and their times, as well as where permission is to be obtained when required? Is permission wanted for street views? How is the light for rapidity, and any other information useful for a ten days' stay?—**RED ROSE.**

## QUERIES UNANSWERED.

May 29.—No. 4709, 4711, 4712, 4713, 4717, 4523, 4726.

## ANSWERS.

**4617. Tripod Stands.**—Lancaster's tripods are as cheap and as good as any stands in the market. The decision as to the best entirely depends upon what class you want—three, four, or two fold. This can only be decided by inspection.—**OSIRIS.**

**4647. Tripod Stands.**—In reply to "Piper's" query, it is rather difficult to say which of Lancaster's stands are the best; they are all as good and as cheap as any person could wish for, but there are other makes quite as good and cheap. Get a friend to advise you.—**W. H. ELLIS.**

**4618. Hare's Camera.**—It is possible to obtain not only equal results with a Taylor's lens stopped down as with a Dallmeyer or Ross, but the definition is quite as fine, aperture for aperture.—**OSIRIS.**

**4653. Slowest Exposure, Kershaw Shutter.**—About one-fifth second.—**OSIRIS.**

**4654. Increase of Speed, Kershaw Shutter.**—As the speed of this shutter varies with almost everyone, it is impossible to say, but if the slowest speed is  $\frac{1}{100}$  and the highest  $\frac{1}{10}$ , you might be able to calculate out roughly the speed obtained with each turn.—**OSIRIS.**

**4355. Potash Developer.**—Add, as required, a few drops of:

Caustic potash ... .. 60 gr.  
Distilled water, to make, ... 3 fluid drms.

By adding this as required for each plate the speed of the developer is practically unlimited.—**E. J. WALL.**

**4659. Reproduction.**—The following list is fairly complete:—Silver processes: plain salted, matt-surface, albumen, collodio chloride, gelatino-chloride, and resin paper. Processes without silver: Ober-netter's copper, cyanotype, Pallet's, ink process, chromate paper, Hunt's chromotype, Willis's aniline process, the powder process, Sobach's anthrako-type, Itterheim's negro-graphic process, platinotype hot and cold and printing-out, sepia-type, kallotype, carbon. Of photomechanical processes we have, photolithography, photogravure, photozincography, papyrotint, collotype, and all the little variations introduced by commercial firms. Autotype is the same as carbon.—**OSIRIS.**

**4675. Photogravure.**—A great deal depends upon how many copies you want. Your best plan would be to write to Mr. W. T. Wilkinson, 14, Duke Street, Adelphi, W., who has helped me.—**PHOTO-LITRO.**

**4676. Negative for Process Work.**—I have not been able to copy such a subject yet successfully. I generally give a fairly short exposure, develop for short time only, fix, wash, and obtain density by continued intensification.—**PHOTO-LITRO.**

**4679. Elko and Hydro.**—Try the formula recommended in the Editorial column of **AMATEUR PHOTOGRAPHER** of March 13th, which gives excellent results.—**BOB.**

**4693. Cutting Paper.**—Any manufacturer who stamps paper in this way should have his paper refused, and it is only usual to stamp one edge of the paper. I fold my paper as follows: I first cut a strip off one end of the paper, which strip measures 3 by 17½ in.; this divided into four pieces gives me four 3 by 4½ pieces, which do for cartes; I then fold the remainder of the sheet down the middle and get two pieces 8½ by 19½; each piece is now folded in half again and I get four pieces 4½ by 19½; each piece is again folded into three, so I get twelve pieces 4½ by 6½, some of which have, of course, the maker's name on, but this I can generally trim off without any loss in artistic result. If you trim off  $\frac{1}{2}$  in., I fail to see how you can anyhow get more than nine pieces out, measuring fully 6½ by 4½. Can you not allow rather less, considering the rebate of negative, which is nearly always about  $\frac{1}{4}$  in.?—**OSIRIS.**

**4695. Instantaneous Shutter.**—Newman's new shutter, 40s.; or his old one, 30s.; Lancaster's Chronolux.—**OSIRIS.**

**4392. Optimus Magazine Camera.**—A good deep orange glass, as obtained from most dealers, can be used with safety. Haes' Perfection candle lamp is perfectly safe, or Parkens would supply you with an orange lamp. When plates habitually stick in consequence of being on glass of irregular thickness, the best plan is to try another plate. I have used Paget's or Thomas's "Cyclist" for some time and never had one too thick yet.—**BOB BOLT.**

**4694. Stained Negative.**—There are seven or eight different methods of intensification; which was used? Probably the negative was not free from hypo, but no help can be given till the method of intensification is known.—**OSIRIS.**

**4694. Stained Negative.**—In answer to "W. R. P.'s" query, I should think he had the intensifying solution too strong, or he kept the negative in it for too long a time. Either of these will help to stain the negative.—**W. H. ELLIS.**

**4698. Barnet Plate, Rapidity of.**—About 22 on Warnerke's sensitizer, or about double as quick as Ilford ordinary.—**OSIRIS.**

**4698. Barnet Plate, Rapidity of.**—I have tried both the Barnet and Ilford plates of each rapidity, viz., ordinary, rapid, special rapid, and I think as far as my experience goes that there is very little difference, if any, between the Barnet and Ilford ordinary plates, but I have always found that the Barnet plates give much better negatives in every line of photography, and I should ask you to buy



dozen and try. I can recommend you Lockyer's hydroquinone developer, which costs, viz., half-pint, 1s. 3d.; one pint, 2s. It can only be got at Lockyer's, the manufacturers, 88, Evelyn Street, Deptford, S.E., and of two special agents, viz., W. Edwards and Son, 157, Queen Victoria Street, E.C.; and J. Fallowfield, Lower Marsh, Lambeth, S.E. You will find it will be a very good and cheap developer, and it will give the details in every case (provided the picture taken was focussed clear), and it will suit any rapidity of plates. Patience is of course required. Regretting you should have waited so long for this reply.—W. H. ELLIS.

4699. **Carbutt's Orthochromatic Films.**—Carbutt's films are, if anything, superior to Edwards' plates in giving colour values. They are more sensitive to orange than Edwards', and certainly give less halation and are quite as thickly coated. I have used them for some time with satisfaction, and tried them last winter abroad on Alpine snow scenes with much finer results than with Edwards' plates.—E. UNUM.

4708. **Hand-Camera.**—The Talmer perfected hand-camera, either with single or rectilinear lens, would suit you well; independently of its optical qualities, which are really excellent, its mechanical arrangement and construction offer advantages which place it far away ahead of anything else I have yet seen. I have exposed many dozens of plates with one of these instruments, and can recommend the camera strongly. If you write to me direct I could let you see some results.—SECRETARY (address with Editor).

4710. **Focussing Screen.**—I have seen Mr. Fitch's, of Angel Road, Brixton, S.W., advertisements for supplying celluloid in the place of glass for focussing screens, and no doubt he will furnish all information by writing to him.—F. W. WALTER.

4713. **Stickphast.**—I have used this for mounting a good many prints, and, as far as I can see, it has not injured them. On a print on Obernetter matt-surface paper a yellow stain appeared after mounting, but as others have remained unaltered, I think it can't have been the paste.—T. WIRRMUR.

4713. **Stickphast.**—This is very unsuitable for mounting photographs, as it contains acetic acid, which causes quick fading. The best mountant I have ever used is that mentioned by Mr. Wall in his "Dictionary." Soak 200 gr. of soft gelatine in 6 oz. of distilled water for an hour. Dissolve by the aid of a water bath, and add, in small quantities at a time, methylated spirit  $\frac{1}{2}$  oz., stirring constantly; allow it to set. Should any spirit separate out, it should be re-melted, and a little more water added. The product should be a pure milk-white firm jelly. A little carbolic acid may be added if desired. When required for use, melt by the aid of hot water or a water bath.—P. R. S.

4713. **Stickphast.**—For an all-round mountant I can thoroughly recommend one made from Mr. W. E. Henry's formula, given in this year's "British Journal of Photography Almanac," page 648:—

Bermuda arrowroot (best) ...	3½ oz.
Gelatine (finest) ...	160 gr.
Methylated spirits ...	2 oz.
Carbolic acid (pure) ...	12 minims.
Water (cold) ...	30 oz.

Mix arrowroot into stiff cream with about 10 oz. of the water (Mr. Henry says 2 oz., but it is easier work with 10), while the gelatine is soaking in remainder. When the gelatine is softened and the arrowroot well mixed, pour all together into an iron saucepan and bring to boiling point; keep at this heat for about five minutes, being particularly careful to stir continually, from the moment the mixture is placed on the fire. When sufficiently cooked, pour into a basin to cool; when cool, add the carbolic acid and spirit, mixed, in a thin stream with constant stirring, being careful to work this into the mixture gradually, as it will assimilate much more easily and quickly than if put in all at once; then bottle and keep well corked. A 2 lb. jam jar or pickle pot will take this quantity well, and is easy to work with. This looks like a deal of trouble, but it amply repays in effectiveness, cleanliness, and good keeping qualities.—THE O'KELLY.

4715. **Optical Contact.**—If you mean to strip the print from the glass again, polish one side of glass with French chalk, squeegee print on whilst wet, and, when dry, strip off. This method, of course, is not suitable for albumenised papers.—PEN.

4715. **Optical Contact.**—By which, I suppose, the querist means the method of mounting prints as *opales* is achieved by soaking the print in a warm solution of gelatine made by dissolving about 2 oz. (soaked over-night till soft) in about 20 oz. of hot water, and then placing it face downwards on the glass, which must be scrupulously clean, and squeegeeing firmly down. When dry, it will be in optical contact with the glass, and quite hard. There are more details than this, which the querist can get if he likes by writing to Messrs. Percy Lund and Co., St. John's Street, Bradford, Yorks.—R. A. B. BENNETT.

4718. **Hire-Purchase.**—Cameras can be had on the hire system by writing to Messrs. Goy, Ltd., Leadenhall Street, E.C., for their forms.—F. W. WALTER.

4718. **Hire-Purchase.**—"Joan" can obtain Underwood's or Lancaster's cameras from Messrs. Riley Brothers, 5, Cheapside, Bradford, Yorks. If "Joan" requires further particulars as to terms, etc., I will

answer, as I have purchased my camera from them, and have just sent last payment.—ALPERUM (address with Editor).

4719. **Rough Surface on Negative.**—Probably due to lime in washing water, especially if you use ferrous oxalate developer. Rub negative before drying with a tuft of cotton wool under the tap. If that fails, soak for a few minutes in a one per cent. mixture of hydrochloric acid.—PEN.

4720. **Hand-Camera.**—Messrs. Sharp and Hitchmough, of Liverpool, will adapt any ordinary camera to a case, so as to be used as a detective camera, after P. Lange's pattern. Lancaster's Instantograph lens is only suitable for sea and sky studies.—PEN.

4720. **Hand-Camera.**—Yes; why not? You have only to set the shutter at its quickest speed and hold the camera in your hand. If you make a neat box with a handle, to contain the camera, you will make a more elegant affair of it. Of course, you will want a hole in front for lens to look through and a hole at side or bottom, through which a wire passes, which, when pulled, lets off the shutter. The front ought to let down on hinges for convenience in setting shutter. If you can get to see the last volume of "Amateur Work" you will find in that full instructions for making a case for this very camera.—R. A. B. BENNETT.

4721. **Instantograph Lens.**—It will not cover when rising front is used to full extent, nor (in my case) when taking views upright way of plate.—PEN.

4721. **Instantograph Lens.**—In answer to "Swiss" query as to whether the lens of Lancaster's quarter-plate Instantograph covers the whole of the plate when the front is raised, I think "Swiss" must have raised the front to such an extent that light got through the camera, and, of course, the lens was not full on the plate. The lens covers the whole of the plate so long as the front is not raised so as light gets through the camera. There ought to be a screw, so as to prevent the front from raising too high.—W. H. ELLIS.

4722. **Toning Bath.**—In reply to "Swiss" query, I should think he either had the toning bath too warm, or he did not wash the prints enough in the water before putting them in the toning bath, with the result that there was a quantity of silver on each print, which prevented the toning solution from performing properly on the prints; or he tried to tone too many prints at a time; or he did not let the toning solution, after he had made it, stand for about twelve hours; or he did not measure the chemicals, when preparing the toning bath, correctly. Any of the above are bound to make a certain amount of difference to the prints when toning, especially the last. Never put more than six prints into the toning bath at a time, never put your prints into a toning bath in the summer warm and only lukewarm in the winter, always tone your prints as soon as possible after printing, always put your prints into cold water before toning, and keep them on the move, and do not let any stick together, and every few minutes change the water, and keep on doing so for about twenty minutes, then the prints will be ready to be toned. I give you a formula for a toning bath which I have used myself for some time, and have always had very good results, viz.: (A) Chloride of gold, 15 gr. (one tube); (B) Acetate of soda, 1 oz.; (C) Bicarbonate of soda, 1 dr.; (D) Water (distilled), 15 oz. A costs 2s., B 2d., C 3d.—2s. 5d. This solution must be kept for about twelve hours, after it has been made, before using. When using, take 1 oz. of this solution to 8 oz. of water; this will tone twenty quarter-plate prints and ten half-plate. They will take from fifteen to twenty minutes to tone. Then put the prints in a fixing solution made of hyposulphite of soda 5 oz. (3d. per lb.), and water 20 oz. Keep the prints in this for fifteen minutes, and then put them into cold water for four hours, and then they can be dried and mounted. Re "untuned prints faded," trim your prints before toning.—W. H. ELLIS.

4724. **Metal Slides.**—Some I used last summer were not light-tight, and though the purchaser returned them to the makers, they were never really satisfactory.—PEN.

4724. **Metal Slides.**—I have used Tylar's metal slides for over two years, and consider them perfect and in all respects satisfactory. I left a dry plate in one, not exposed for over twelve months, lying in my kitchen; I then exposed it, with capital results, taking a photograph of a horse.—A. B.

4724. **Metal Slides.**—I should think "E. H. K." would do well in purchasing a few of Tylar's metal dark-slides. I have always found them perfectly light-tight, and stand more handling than the mahogany slides, and in every way most reliable and satisfactory.—W. H. ELLIS.

4725. **Bromide Paper.**—Get a good powerful oil lamp, and expose to that in your dark-room, or use your developing lamp. Exposure must be longer than with gas.—PEN.

4725. **Bromide Paper.**—If A. Groves will communicate his address with me through Editor, I will give him particulars he requires, as they are too long for these columns.—ALPERUM (address with Editor).

4725. **Bromide Paper.**—Waste of trouble. Light a match in front of the frame, and keep it burning close to it for the required number of seconds; or

have a ruby lamp and take off the shade, leaving the flame exposed in front of the negative for the required time, which experience will soon teach you. Gas is by no means essential.—R. A. B. BENNETT.

4725. **Bromide Paper.**—In reply to A. Groves, I do not think his query is at all clear to understand. As far as I know, there is only one way of exposing bromide paper, and this he has done. I have always had good results by exposing my bromide paper exactly the same way as he states in his query, but he does not say what results he has had, whether good or bad. A little clearer query might be better understood. What is his complaint?—W. H. ELLIS.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PRO:

J. B.—1. Neither your friend nor you yourself would be able to detect the slightest difference between the working action of the two lenses, unless you had an optical bench and examined them for the secondary spectrum, therefore, we say that, considering the increase in price, which is counter-balanced in our opinion by a larger aperture, you had better stick to our first recommendation. 2. We cannot possibly see what use a wide angle landscape lens will be, wide angle lenses are instruments which should only be used in situations where a longer focus lens is out of the question; the nearer the focus of a lens approaches the normal distance at which a picture is examined, which may be taken as about eighteen inches, the truer the perspective and the more pleasing the results, artistically, when so examined. We therefore say, do not get a wide angle landscape lens; if necessary, you can easily use your short focus rectilinear. 3. Yes, practically the 12in. single lens would be the one of the greatest use, or at least the one we should use in nine cases out of ten. We shall be pleased to see you if you can give us a call some Monday when in town.

INSTANS.—Either the Thornton-Pickard or Underwood's blind shutter may be relied on.

ALPERUM.—The plates were all right. We hope to send you back the box and negatives shortly. They were correctly exposed, but rather poor in artistic qualities.

1891.—You can use either lens, and the focal length will be doubled and the exposure quadrupled.

E. W. MALE.—1. The time required for carbon printing is of course dependent upon the character of the negative and the actinic power of the light; as a safe limit, we may say from one half to one third of the time required for ordinary albumen paper under similar conditions. 2. The standard tints are obtained by making a pigment agree in colour and tint with a piece of albumen paper exposed for a certain time, which is found by experiment to be sufficient for a thin negative. 3. If exposed prints are kept in a dry place, there is no "continuing action" of light. You would be quite safe to develop in the evening prints which had been exposed in the day. 4. The Autotype Company, New Oxford-street, W.C., or the Woodburytype Company, 157, Great Portland-street, London, W.; see our advertisements, page iii. 5. We are sorry, but we can give you no formula for this—it would be preferable for you to buy the tissue ready made—we will, however, if you like, hunt out a formula, if you let us know.

F. G. H.—The plates are quite suitable, but personally we should prefer a more rapid plate like the Paget xxxxx, which will give excellent results with almost any developer, though for instantaneous we prefer the combined ikonogen and hydrokinone, given in this column March 13.

G. R.—Provided both lenses are of the same focus, there is not a pin to choose between them; we have used both with excellent results. There are no better lenses in the market than the two you name.

MISS F. TAPP.—We shall use your kind contribution, for which many thanks.

W. H. HAYLES.—Your letter on Cambridge is published in our correspondence columns.

L. S. D.—The suggestion in your letter, if it were practicable for it to be carried out, would result in much greater difficulty in selecting a hand-camera than at present. Because one man can make his own camera, we fear it does not follow that everyone else could, even with the aid of an "illustrated descriptive article." Hand-cameras can now be purchased from ten shillings up to ten guineas, and beyond all, capable of doing excellent work, far better than any that are likely to be turned out at home, except under very exceptional circumstances.

ISIS.—The intensifier is to be bought, we believe, of Messrs. Horne, Thornthwaite, and Wood, Strand, or E. G. Wood, Cheapside. It is not poisonous. We could not accept the prints, as they would not conform to our conditions. We admit it is quite possible that "it is a pity that one cannot send in



jointly executed work after the style of novelists, dramatic authors, etc.," but we see no reason to alter our rules.

**DROP SHUTTER.**—Although, as we said, "Photography at Home" is a go-as-you-please competition it is manifest that photographs should come within the subjects as enumerated in the prospectus which, if you have not, we shall have pleasure in sending.

**J. L. LUDINGTON.**—The hand-camera you mean has many good points, and is cheap for the money, but we have not had an opportunity of subjecting it to a practical trial. You would find 5 by 4 a good size, as it admits of getting a good quarter-plate print from the negative without any loss of definition at the edges. We have written to you.

**ARTHUR B. CARRE.**—Thank you very much; we have registered your name and address, and may be glad to avail ourselves of your help.

**F. W. REYNOLDS.**—We have at different times subjected the lenses you name to practical tests, and found them to give good results. You will, we feel sure, be satisfied, should you decide to purchase.

**MISS C. E. YONGE.**—The query is inserted. If nothing comes of it we will insert query No. 2 next week.

**G. L. BARBER.**—The *Photographic Reporter* (Hazell, Watson, and Viney, Ltd., 1, Creed Lane, E.C.), monthly, 1s., contains a directory of photographic societies, with the Secretaries' names and addresses. This would probably help you. The North London Phot. Soc. Secretary, G. J. Clarke, 52, Queen's Road, Brownswood Park, N.; or the North Middlesex Phot. Soc. Secretary, J. McIntosh, 14, Lowman Road, Finsbury Park, London, N., would most likely suit. The Secretaries in both cases would give you all particulars.

**JOHN A. GORDON.**—The "closure" has been removed, and we shall gladly advise you or any of our subscribers in these columns upon any question appertaining to photography. The camera you first named is a thoroughly well made article, the inventor is the actual maker and a most intelligent workman. We think you will be quite satisfied with it. Of course, you should have no hand-camera of less than  $\frac{1}{4}$  plate size. If you decide to have a camera from the maker named, he will make you an article that will stand rough usage and will stand an African climate. Many thanks about the dark-room. We will send our form if you will kindly send us name and address.

**B. P. JACKSON.**—Many thanks. We shall use the matter shortly, and will make a block to illustrate the same.

**J. H. PICKARD.**—We will set up the article for *Reporter*. Strange to say, it had been determined to do as you suggest in your postscript, on the day we received your letter. In a few days you will receive a communication from our publishers.

**NEMO.**—The hand-camera you have bought is one which we have found to do excellent work, and cannot understand how it is you do not succeed. If you write more explicitly and tell us in what way you cannot succeed, we can doubtless help you.

**B. DILLON.**—The prints were sent off the day before your letter came to hand.

**H. HOLT.**—Very shortly.

**H. A. G. JEWITT.**—The old negative bath is hardly suitable for sensitising paper. Your best plan will be to dissolve some pure carbonate of soda in water, about 1 oz. in 4 oz., add this gradually to the old bath, shaking between each addition till no further precipitate is caused; collect the precipitate on a filter paper, wash well with distilled water. Mix 1 part of pure nitric acid with 3 parts of water, pour this little by little on to the precipitate in the filter paper till the whole of the carbonate of silver is dissolved. You have then a solution of nitrate of silver probably in a slight excess of acid. You now require to find out the strength of your solution, which can be done as follows: Dissolve 15 $\frac{1}{2}$  gr. of pure chloride of ammonium in 12 oz. of distilled water; measure out very accurately 1 dr. of the bath to be tested, and place in a stoppered bottle, rinse the measure out with a drachm of distilled water, and add to the bottle. Now add the chloride solution gradually, allowing 1 dr. for every possible 4 gr. of nitrate of silver. For instance, suppose we guess that there is 100 gr. to the ounce, the drachm will contain 12 $\frac{1}{2}$  gr., therefore we shall require about 3 dr. of chloride solution. We take as a precautionary measure 2 $\frac{1}{2}$  dr. of chloride solution and add to the silver solution in the bottle, and shake. When the chloride of silver has settled, we add 15 minims of chloride solution, and if a precipitate is still caused, we add a drop or two of a solution of bichromate of potash and shake. Deep red chromate of silver will be formed. We now keep on adding the chloride solution in 15 minim doses and shaking till the chromate of silver is all decomposed and the supernatant water is yellow in colour, which will not be the case till all the silver is precipitated as chloride. We then reckon how much chloride solution we have used, and find, say, 4 dr. 15 minims. We may then multiply this by 4,  $4\frac{1}{4} \times 4 = 17$  gr. per drachm.  $17 \times 8 = 136$  gr. per ounce. As we want our silver bath only 60 to the ounce, we have only to dilute with distilled water and make distinctly alkaline by adding a trace of carbonate of soda and the bath is ready for use. We shall be pleased to help you further if required.

**H. R. LEVINSON.**—The formula is:

Pyrogallol ... .. 1 oz.  
Sodium sulphite ... .. 4 "  
Sulphurous acid ... .. 1 dr.  
Distilled water ... .. 9 oz.

Dissolve the sulphite in the water, add the acid, and pour on the pyro.

**R. GORDON.**—We have no personal knowledge of the camera under the name you mention. The firm brought out a camera last year, which had a large sale and was capable of doing very excellent work. We have seen none of their this season's goods and are, therefore, unable to speak from personal knowledge of their merits. If you will tell us what money you are prepared to pay for a quarter-plate hand camera, we shall have no difficulty in recommending you a suitable and reliable instrument.

**NENNI.**—Yes, certainly you can eliminate the hypo now. Place the negatives in water and allow to soak for ten minutes, pour off the water, and replace by fresh; repeat this operation every ten minutes; in one hour the negatives would be thoroughly washed. Any good commercial washer, such as Wood's or Lancaster's, would help you considerably.

**A. G. PATERSON.**—The plates marked No. 19 are one-third more sensitive than those marked 18, and the former are superior in quality and price.

**DUBLIN.**—Although you give no name and address, we will answer your question by stating that we are not in the habit of criticising photo-mechanical prints which appear in the columns of contemporaries.

**J. H. J.**—The prints are far away, better than the average work of professional photographers and what little retouching has been done shows great care. We have not replied to you by letter, as although we must acknowledge to admiring your work, we do not give certificates of merit or testimonials to professional photographers. Why not send to a photographic exhibition? Your work will surely be noted, if not medalled. Specimens are returned. We should much like a copy of the girl with guitar.

**B. B. WAIN.**—We will try and get you some pulls. How many will you want?

**A. R. QUINTON.**—We cannot publish your letter, but should recommend you to address your complaint to the Photographic Dealers and Manufacturers' Association, 7, Southampton Row, W.C.

**TE WIRIMU.**—Certainly the picture would be eligible. Thanks for the correction; very pleased to be put straight upon such matters at all times.

**JAS. ANDREWS.**—Received with thanks, proof of article on "Composition" sent you this week.

**A. J. LEESON.**—Very shortly, when the prints will be returned.

**GRACE ROWE.**—We should be so much obliged if you would write us a short article upon the interesting places near Camborne.

**W. T. BARTON.**—There are few prints will stand twelve hours' washing without deterioration; six soakings in fresh waters during one hour are better than twelve hours' washing as you now work. Chloride of gold should always be neutralised. Binding cases can be had from our publishers.

**S. GLAZIER.**—If you are using your shutter at anything smaller than one-tenth of a second, use full aperture; also full aperture for inland work with shutter.

**A. JAMES.**—We write you by post.

**F. BENTZ.**—Letter by post.

**LENS.**—We think that you had better try Ross' new extra rapid symmetrical; though high in price, it is a very fine instrument. Taylor's is a first-class lens, and you would probably be able to get one on trial from the maker; or Wray's special detective would suit you.

**T. HALL.**—(1) Negative wants intensifying. (2) Not printed deep enough. (3) Practically untuned. (4) Ditto. You have got some impurities in your stock bath, and consequently the gold has precipitated. Add fresh gold, allow the bath to stand twenty-four hours, and then tone. The bath will give excellent purplish tones when properly made and used.

**LUX.**—The special number, we hope, will be out very shortly. Can you reduce every quantity to 4 oz.? Try the following:—

(I.)  
Eikonogen ... .. 80 gr.  
Sodium sulphite ... .. 160 "  
Water ... .. 4 oz.

(II.)  
Caustic potash ... .. 80 gr.  
Water ... .. 4 oz.

Mix in equal parts.

**COUNTRY COUSIN.**—We do not understand what you mean by "dirty;" are the glasses dull, or the mount, or what? Unscrew the glasses and wipe with a soft silk handkerchief. If you like to send us lens and pay carriage back, we will see to it for you.

**S. ARMSTRONG.**—(1) These lenses we believe to be of French make, and are not superior, in some cases inferior, to English lenses. (2) Wray's rapid rectilinear would satisfy all your requirements.

**T. H. BISHOP.**—Letter by post. You did not keep your negatives in developer long enough.

**ALPHA.**—Scratching on one corner of the film with

a sharp stylus is what we always use. You might obtain for a few shillings a diamond point, and write on the glass on the back of the plate in one corner.

**PYRO.**—Letter by post.

**W. T. TUCKER.**—Thanks for your note, but "there is nothing new under the sun." Your idea is merely utilising the action set up by the acid in the paper on the hypo to obtain sulphur toning, the earliest of all methods and by no means permanent results. Your prints are charming little studies, and might stand a chance in one of our competitions.

**W. DAVIES.**—(1) An inch off foreground would be an improvement, and the camerist should be wanting; you have a chance of making a picture out of this. (2) With cows, half an inch off foreground and deeper printing of clouds will improve. (3) Snow scene; print under-exposed, snow is white paper. (4) Snow again white paper, wrongly developed. (5) Under-exposed, snow too white; why didn't you make your figures snowball each other? (6) Good, we should have preferred the other way of plate. (7) The straight lines of fence spoil an otherwise excellent snowscape. (8) A little too flat and contains no leading object. (9) A capital evening effect; try again, as you suggest, with a boat and give a little longer exposure so as to obtain a little more detail in the right-hand corner. Your technical work is good, though your bromides are a little too hard; you ought to try your luck in our competitions, and certainly your work is above the average of some we have.

**MRS. J. F. RICHARDSON.**—Letter by post.

**G. H. M.—(1)** Very fair, light a little too low. (2) Good. (3) You were a great deal too far off to make anything of this view, otherwise it is pretty fair. The foreground contains nothing of any interest.

**ART STUDENT.**—You should get a quarter-plate portrait lens, which would just suit your purpose, being quick enough for children. Just the lens for enlarging when stopped down slightly.

## Monthly Competition.

### XXV.—VILLAGE LIFE, FARMING, ETC.

Title of Photograph.	By whom sent.
A Manx Cottage ... ..	C. A. Timmins
Sheep Shearing ... ..	W. S. Andrews
Evening Milk ... ..	D. G. Urquhart
On the Way to the Well ... ..	E. Winn
Hurdle Making ... ..	P. R. Salmon
A Village Smith ... ..	M. S. David
Life's Evening ... ..	C. A. Irvine
Ploughing ... ..	Miss E. Annesley
The Farmhouse, Milking Time ... ..	E. J. Appleby
Sheep Washing ... ..	Miss C. V. Davies
Pets ... ..	Mrs. S. F. Clarke
The Sage, the Swain, and the Sweetheart ... ..	R. O. Macleod
Day's Labour Done ... ..	H. C. Bentley
Ploughing ... ..	J. Tims
Ploughing ... ..	A. J. Golding
The Daily Task ... ..	A. Marsden
Evening in the Ardennes ... ..	T. N. Postlethwaite
The Dinner Hour ... ..	C. H. Ellis
The Tollers and the Bells ... ..	E. Ensor
Mapledurham ... ..	J. A. Booth
Steam Threshing ... ..	H. Kindermann
Ploughing ... ..	H. Todd
Milking Time ... ..	R. W. Copeman
Practising for the Harvest Home ... ..	G. A. Carruthers
A Welcome Rest ... ..	A. James
Felling Oak Trees ... ..	Miss F. M. Pownall
Supper Time ... ..	H. Selby

## Quarterly Examinations in Photography.

### QUESTIONS.

- Forward a lantern slide produced by reduction from the negative in your possession (Question 16), using a chloride plate or chloro-bromide, so as to obtain a red image.
- What are the advantages and disadvantages of dry collodion plates, as compared with gelatine dry plates? Give an outline of the dry collodion process.
- Give a brief resumé of the leading iron printing process.

(Latest Day for Answers—June 15th.)

### RULES.

- Answers must be received on the morning of the Monday week following the publication of the question.



2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT,"  
AMATEUR PHOTOGRAPHER,  
1, CREED LANE,  
LONDON, E.C.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. **Halfpenny stamps preferred.** A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the seller to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

**Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.**

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

**Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.**

"Amateur Photographer," etc.—AMATEUR PHOTOGRAPHER, 163 numbers; 3s. 9d. the lot. — Frank, 63, Gayhurst Road, Dalston.

AMATEUR PHOTOGRAPHER, vols. I. and II., bound, also Nos. 230 to 281; also red lamp, cost 12s. 6d., sundry printing frames, etc.; offers?—Sinclair, 133, Cannon Street, London.

**Bicycle.**—Safety bicycle, cushion tyres, ball bearings all parts, including pedals, adjustable seat, excellent brake, and mud guards, in splendid order everywhere, lamp, and all accessories; cost £15; accept £8; great bargain. — H. Baker, 2, Acre Lane, Brixton, S.W.

Ideal pattern Safety bicycle, ball bearings, lamp, bell, etc., all in perfect condition; price £5 10s., or exchange for good whole-plate set and cash.—Caesar, St. Margaret's Villas, Twickenham.

**Cameras, etc.**—Half-plate camera, with all movements, best leather bellows, and three double-hinged dark-slides, also tripod and stand, all new, and the best of workmanship; price £5. — H. Atkinson, Boughton Heath, Chester.

Quarter-plate bellows camera (by Rouch), three double backs, and light folding ash stand, perfect condition; £2.—G. E. Franklin, Rickmansworth.

Whole-plate camera, three slides, tripod stand (very strong), two fronts, in splendid order, almost new; £6 only; approval of Editor.—H. Holt, Conservative Club, Liverpool.

Lancaster's 1889 extra-special triple extension quarter-plate camera, with camera obscura viewfinder, 40s.; Thornton-Pickard 1½ in. time shutter, long tubing for self-portraiture, 17s. 6d. cost 28s. 6d., new.—Turnbull, Smedley Road, Manchester.

**Cameras, Lenses, etc.**—Lancaster's half-plate International camera, lens, slide, tripod, and changing bag, 60s.; quarter wide-angle Rectigraph, 18s.; 5 by 4 rapid rectilinear, cost £2, price 20s.—2, Orrisdale Terrace, Cheltenham.

Lancaster's quarter-plate Instantograph lens, shutter, three double slides, tripod, c.d.v. burnisher, two printing frames, and developing dish, all in good condition; 28s. the lot. — G. H., Sunderlandwick, Driffeld, York.

Lancaster's quarter-plate Instantograph camera, lens, shutter, two double slides, and tripod, in excellent condition; lowest price 30s.—Messer, 18, Mortimer Crescent, Kilburn, London.

International half-plate camera, three double slides, R.R. Iris lens, tripod, Kershaw shutter, and waterproof case; £6 10s. — Spence, Winterfield, Higher Broughton.

Half-plate camera (by Hulme), double extension, leather bellows, reversing back, etc., one mahogany double slide, six Tylar's ditto, all in case, 70s., cost £5; quarter-plate Lancaster's International rapid lens and shutter, four double slides, and stand, 37s. 6d.; Griffiths' detective, with three quarter-plate slides, finder, etc., 15s. — Butland, 8, Church Terrace, Penarth.

Half-plate 1891 Lancaster's Instantograph camera, dark-slide, tripod, f/8 R.R. lens; bargain, 72s.—53, Slad Road, Stroud.

Quarter-plate Lancaster's 1890 Instantograph, three double dark-slides, complete, 38s.; enlarging lantern, mahogany body, 5 in. condensers, no front lens, 29s.; cabinet portrait lens, Waterhouse diaphragms, been used with lantern, 18s.; 5 by 4 R. rectilinear lens, new, 18s.—No. 167, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Dark-Room.**—Portable dark-room, takes in halves longways, shelves, working bench and seat fitted, inside, size 7 ft. high, by 3 ft. square; first offer.—Seen any evening at 70, Lee Road, Blackheath, S.E.

**Dark-Slides.**—Dark-slides, three double half-plate wooden brass-bound (by Ross), perfect condition; approval; 18s.; cheap.—Barton, Morrilton, Elgin.

**Hand-Cameras, etc.**—A 5 by 4 Kodak, good as new; cost £10 7s.; sell for £7; very cheap. — G. H. Franklin, Rickmansworth.

Kodak, No. 3 Junior, nearly new; £6; cost £8 7s. 6d.; approval; deposit.—Miss Barker, Clunty Hill, Forres, N.B.

Perken, Son, and Rayment's hand-camera, carrying 12 quarter-plates, extra-rapid Euryscope lens, cost 8 guineas, nearly new; £4, case included. — On view at the AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

The Dot hand-camera, quite new, carries twelve plates 2½ by 3½; £1; cost 28s.—Billam, Yarm.

Miller's Adelphi hand-camera, 70s.; a splendid 5 by 4 rapid rectilinear lens (by Laverne), with Kershaw shutter, 30s.; Watson's Cyclists' tripod, very compact, light, and rigid, 10s., cost 19s. 6d.; all above good as new.—Rigby, 125, Acomb Street, Greenheys, Manchester.

Detective, takes six negatives, on circular plate, nickel-plated, may be carried free from observation, good as new, with four plates, complete; £1.—Tully, 41, High Street, Exeter.

Adams' Ideal hand-camera, new about three months ago, very little used; price £6; cost £7.—J. D. A., Fenchurch Street, E.C.

Luzo, takes 48 quarter-plates on transparent film, complete with case; cost over £7; offers? cash only.—Daubeny, Bersted, Bognor.

Presto detective camera, never used, just received from maker, complete in case; first offer above 6s. will have it.—54, Fore Street, Ivybridge.

Mahogany hand-camera, focus any distance, 17s.; Pocket ditto, with combination lens, 12s. Wanted, half International.—W., 10, Pembroke Road, W.

**Lenses, etc.**—Lancaster's half-plate instantaneous lens and shutter, Iris diaphragms; 20s.—309, Liverpool Road.

What offers in cash or exchange for Adams and Co.'s whole-plate R.R. lens, 11 in. focus, with stops and drop shutter, as new?—The Enterprise Photograph Co., Bodmin.

On sale, 8½ by 6½ portable symmetrical lens, 8 in. focus, cheap, nearly new. — Warburton, Oak Road, Withington, Manchester.

Ross' 5 by 4 lens, rapid symmetrical; £3; approval.—Sykes, 9, Belvedere, Weymouth.

5 by 4 R.R., splendid lens, 20s.; Wray's 5 by 4 R.R., with Iris, perfect, 50s.; 5 by 4 Optimus portable symmetrical, perfect, 27s. 6d.; Suter landscape, 9½ in., perfectly new, 27s. 6d.—Christie, Newtown Stewart, Ireland.

9 by 7 French-made R.R. lens, set of stops, in good condition, gives splendid definition, also Newman's shutter to match, newest design; will sell for £4;

cost nearly double; approval; deposit.—Geo. Snowball, Kent House, Gateshead-on-Tyne.

Rapid landscape lens, 16 in. focus, with diaphragms; £1.—Raven, Halifax.

Half-plate rapid rectilinear lens, with Iris diaphragm, Hookins' Rectilinearum, nearly new; will take 35s.—Can be seen at the AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Dallmeyer's 7½ by 4½ wide-angle landscape lens, rotating stops, as new. Wanted, Eastman's quarter-plate roll-holder. — A. Spiller, Hillside, Hampstead Hill Gardens, London, N.W.

Lancaster's lenses, quarter instantaneous, and shutter, half-plate wide-angle, both Iris diaphragms, Decoudun's oxydised photometer; offers? cash only.—Daubeny, Bersted, Bognor.

6 in. R.R. lens, suitable for hand-camera; price 7s. 6d.—Martin, Unity Street, Ipswich.

**Sets.**—Good 5 by 4 set, bellows-body camera, portrait lens with stops, developing dishes, printing frames, complete in neatly-painted pine box; owner using larger; cost £5 10s.; take £2.—James Robinson, Castleberg, co. Tyrone.

**Sundries.**—Photographic chest, containing chemicals in labelled stoppered bottles; £1.—Raven, Halifax.

Balcony and pedestal, imitation old stone, worth 50s.; price 30s.; photograph two stamps.—Address, 7, Dereham Road, Norwich.

Typewriter (Merritt), 78 ordinary and French type, quite new; cost £3 3s.; for £2.—P. Allman, 17, Alexandra Drive, Liverpool.

Complete set of lawn tennis, comprising four racquets, portable poles, balls, book of rules, net, ropes, etc., in polished box, in splendid order; cost £3 10s.; will take 45s.; approval.—A. Henry, 4, West Brixton, S.W.

**Tripos.**—Strong 3-fold tripod, 10s. 6d.; quarter-plate, 4s. 6d., good condition.—309, Liverpool Road. **Type,** 150 rubber-faced, holder, pad, ink, etc., suitable naming negatives; approval; 7s. 6d., cheap.—Barton, Morrilton, Elgin.

## WANTED.

**Cameras, etc.**—Good whole-plate camera, in exchange for Kangaroo Safety bicycle (by Hillman, Herbert, and Cooper), in splendid condition.—A. W. H., 4, St. Michael's Road, Croydon.

Camera, half-plate, double extension, swing-back, reversible back, three double slides, turntable, and legs, no lens; state maker (Ross preferred), fullest particulars, and lowest cash price; approval.—Johnson, 19, Ellenborough Park, Weston-super-Mare.

**Cameras, Lenses, etc.**—Quarter-plate camera and lens, or Shew's quarter-plate hand-camera.—A. B., Acacia Villa, Leicester Road, New Barnet.

Dallmeyer's 1B portrait lens, also half or quarter Merveilleux or Meritoire camera only, cheap.—Turnbull, Smedley Road, Manchester.

**Dark Slides.**—About three dark-slides, Tylar's preferred, cheap.—Webb, 65, Woodstock Road, Finsbury Park, N.

Two double slides, to fit Lancaster's half-plate Instantograph; will exchange AMATEUR PHOTOGRAPHER from 226 to present time, good condition, part cash.—Walton, School House, Rawlinson Street, Barrow-in-Furness.

**Lantern.**—Optimus lantern, to enlarge and protect.—Waller, Banagher, King's County.

**Lenses, etc.**—15 by 12 rapid landscape lens, in exchange for 12 by 10 group lens, by Kranz. — Penraven, S. Matthew's, Ipswich.

Eastman's quarter roll-holder, or 5 by 4; and fixed focus R.R. lens, by Taylor or Wray; state lowest cash price.—Hoyle, 19, Rochdale Road, Milnrow, Rochdale.

Lens, 9 by 7, Optimus preferred, lowest price; approval.—J. Crowder, Flowerfield, Hyde.

**Set.**—Whole-plate camera set, square bellows, folding tailboard, all movements, three slides, good condition; send particulars; approval; deposit.—Hugh Walton, Alston, Cumberland.

**Shutters.**—Kershaw, Thornton-Pickard, or Lancaster's See-Saw, to fit 1½ in. hood. — H. Norris, 15, Seymour Grove, Old Trafford, Manchester.

**Sundries.**—"British Journal of Photography," the back numbers for November and December, 1888.—10, Harewood Square, N.W.

**Tripod Stand.**—Tripod stand, to fold very small, must be rigid and cheap. — 7, Linscott Road, Clapton.

**Views.**—Views, Cornwall; would purchase negatives (north coast) if suitable.—Bullmore, Newquay, Cornwall.

## MAHOGANY DARK SLIDES.

Book pattern, well seasoned wood, fitted to any Camera. Send dark slide or back when ordering.

¼ plates, 5s.; ½ plates, 8s. 6d.; 1/1 plates, 11s. 6d.,

CARRIAGE PAID.

UPSON, Chemist & Photographic Dealer,  
MAIDENHEAD.



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POSTAL UNION.....	" " 6s. 6d.....	" " 12s. 0d.
INDIA, CHINA, ETC.....	" " 7s. 6d.....	" " 15s. 8d.

## NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**ADVERTISEMENT DEPARTMENT.**—All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to PARRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—Trade Advertisements are received up to Tuesday morning.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or

Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.**—To ensure insertion, all Communications should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.**—Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

## PUBLIC SCHOOLS COMPETITION.

OPEN TO BOYS UNDER SEVENTEEN YEARS OF AGE.

- Class I. Landscape. "Amateur Photographer" Silver and Bronze Medals.  
 II. Portraits, including Groups " " "  
 III. Animals " " "  
 IV. Architecture " " "

**NOTE.**—Entry forms now ready. Send stamped addressed envelope endorsed "Competitions," The Editor, "AMATEUR PHOTOGRAPHER," 1, Creed Lane, London, E.C.

Latest date, June 17th.

# "AMATEUR PHOTOGRAPHER" COMPETITIONS. PHOTOGRAPHY AT HOME.

PRIZES FOR PAST WINNERS:

One Gold, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal. One Silver, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal,  
 One Bronze, "Niepce," 1st AMATEUR PHOTOGRAPHER Progressive Medal.

OPEN TO GENERAL COMPETITORS:

Two AMATEUR PHOTOGRAPHER Gold Medals. Two AMATEUR PHOTOGRAPHER Silver Medals. Two AMATEUR PHOTOGRAPHER Bronze Medals.

Certificates will be placed at the disposal of the Judges should they see fit to award them.

All Photographs must be endorsed "Photography at Home," and sent, on or before Tuesday, the 30th of JUNE, 1891, addressed to—

The Editor, AMATEUR PHOTOGRAPHER,  
 1, Creed Lane, London, E.C.

## THE MOST PERFECT HAND CAMERAS

## THE KINEMATIC



PATENT APPLIED FOR.

Has one simple movement only, and not two or three complicated ones; size 9 x 9 x 3½; weight only 4½ lbs., with 12 quarter plates; fitted with rapid achromatic lens and view finder, a shutter ever set for instantaneous or time; and neatly finished in leather.

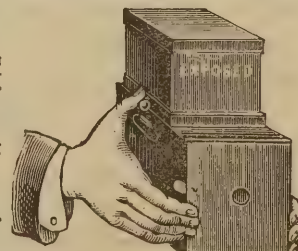
The "KINEMATIC" is fitted with a patent central opening and closing automatic self-registering exposure shutter which cannot possibly be accidentally opened or shut by vibration or any other cause. This shutter is unique, and is the only one that registers the number of exposures taken, and can be used for either instantaneous or time exposures.

Price £3 3s.

Fuller details, if required, from

S. T. MATTHEWS & CO., 8a, John Bright Street, BIRMINGHAM.

## THE ITAKIT



PATENT APPLIED FOR.

Carries 24 3¼ x 3¼ plates; weighs only 3½ lbs., with plates; fitted with rapid achromatic lens and shutter for instantaneous or time exposure; a marvel of cheapness.

Price 12/6.

Ditto, with view finder and focussing screen, full size of plate, 20/-

Cases for ditto, if desired, 8/6 extra.

Extra magazines for either, 3/6 each. These contain carriers for holding an additional 24 plates.

Specimen Photographs of Itakit, 3 stamps.

## AN EXCELLENT OPPORTUNITY FOR AMATEURS.

### A Wholesale Dealer's STOCK-IN-TRADE AT ABOUT HALF-PRICE.

**J. H. SKINNER & CO.** having purchased of the Trustee to the estate of Mr. J. MOTHERSILL, late of 6, Southampton Row and Holloway Road, the entire Stock-in-Trade at a very large reduction off cost price, now offer it in lots to suit purchasers, at about half the ordinary price. Complete List sent post free on application, including—About 350 dozen Beernaert Dry Plates at 40 to 50 per cent. off List.

About 20,000 C.D.V. and 20,000 Cabinet Mounts. A variety of Cameras at little more than half-price.

4-fold Ash Tripods, with Leather-Covered Brass Top, at 12s. each; ditto, with Bottom Joint Sliding, 14s. each.

Whole Plate Square Camera, with Rising Front, Reversing Back, Rack and Pinion, and 1 Double Slide, at £2 2s.

Also Flash Lamps, Developing Dishes, Instantaneous Shutters, View Finders, Border Negatives, Cloud Negatives, Bromide Paper, Pressure Frames, etc., etc.

All at an ENORMOUS REDUCTION to clear, offered subject to being unsold on receipt of order, as these goods cannot be replaced except at ordinary prices.

COMPLETE LIST SENT POST FREE ON APPLICATION TO—

**J. H. SKINNER & Co., Manufacturers of Photographic Apparatus, EAST DEREHAM.**



# THE "AMATEUR PHOTOGRAPHER" COMPETITIONS, 1891.

The Dates given below are those upon which the Competitors' work must actually be received.

JUNE	17	...	Public Schools	...	...	...	...	...	Entry form on application.
"	30	...	* Photography at Home	...	...	...	...	...	Entry form on application.
JULY	1	...	Monthly Photographic	...	...	...	...	...	OUT-OF-DOOR FIGURE SUBJECTS, GROUPS, ETC.

All prizes will be in the form of Medals from the "AMATEUR PHOTOGRAPHER'S" several dies. No prize winner will be allowed to compete again for a Medal of the same value as that awarded him. The "AMATEUR PHOTOGRAPHER" Monthly Competitions are for the encouragement of beginners and those who have never entered a competition or exhibited their work. In the competitions marked with an asterisk, special or "progressive" Medals will be offered for competition by past prize winners.

Further Particulars, Entry Forms, etc., will be sent on receipt of stamped envelope.

Address: THE EDITOR, "AMATEUR PHOTOGRAPHER,"  
1, CREED LANE, LONDON, E.C.

NOTE.—ALL APPLICATIONS TO BE ENDORSED, "COMPETITIONS."

## BOOKS PUBLISHED AT THE OFFICE OF THE "AMATEUR PHOTOGRAPHER."

**DICTIONARY OF PHOTOGRAPHY.** By E. J. WALL. New and revised edition, 2s. 6d.  
It contains more information on Photography than any book published.

**BOOK OF THE LANTERN.** By T. C. HEPWORTH, F.C.S. Third edition, 3s. 6d.  
The only book published that gives complete instructions as to how to make lantern slides, purchase and work the optical lantern.

**ART PHOTOGRAPHY.** By H. P. ROBINSON. 1s.; cloth, 1s. 3d.  
In this book Mr. Robinson deals with Art in a manner which the student can understand and appreciate. No amateur should be without it.

**ART OF RETOUCHING.** By J. HUBERT. 1s.; cloth, 1s. 3d.  
The cheapest manual on "Re-touching," written by one who knows, for those who wish to learn.

**PLATINUM TONING.** By LYONEL CLARK. 1s.; cloth, 1s. 3d.  
This book has revolutionised printing processes. The instructions given by Mr. Clark permit of obtaining the most delightful range of tones. Every one should buy a copy, and learn how to do it.

**EVENING WORK.** By T. C. HEPWORTH, F.C.S. Just Published, cloth, 2s. 6d.  
This is a most delightful book, from which any number of good things may be learnt. The Chapters on the application of the ELECTRIC LIGHT to photography are most interesting and instructive.

**PICTURE MAKING BY PHOTOGRAPHY.** By H. P. ROBINSON. Cloth, 2s. 6d.  
Is a book for the art student to study carefully. The examples given will help him materially to make pictures.

**EXPERIMENTAL PHOTOGRAPHY.** By CLEMENT LEAPER, F.C.S. 1s.; cloth, 1s. 3d.  
This book is a guide for the beginner, and traces the whole course of work for any one taking up photography. It should be the constant companion of the Amateur Photographer.

**CAMERAS, LENSES, AND SHUTTERS.** By Sundry Writers. 1s.; cloth, 1s. 3d.  
This book contains many valuable articles upon apparatus, contributed to the *Amateur Photographer* competitive papers, and which were awarded prizes.

**DEVELOPMENT.** By LYONEL CLARK. 1s.; cloth, 1s. 3d.  
A very handy book on developing, which should be read by all; it also contains an article upon the use of Eikonogen. Mr. Clark's successful photographic work should induce many to acquire a knowledge of how it's done.

**A TOURIST'S EQUIPMENT.** By Rev. PRECENTOR MANN, M.A. 6d.  
A very useful little pamphlet, giving the most complete instructions as to what kit to take, how to use it, and other useful "tips" for the touring photographer.

**PRIZE PICTURES: THREE WEEKS IN NORWAY.** By PAUL LANGE. 2s. 6d.; cloth, 3s. 6d.  
This book contains several most beautiful views of Norwegian scenery from negatives by the author, also a brightly written account of the trip. The illustrations are allowed to be some of the finest ever produced.

NOTE.—Any Photographic Publication can be supplied by Messrs. HAZELL, WATSON, & VINEY, LD., and a full list of books upon Photography will be sent upon application

London: HAZELL, WATSON, & VINEY, LD., 1, Creed Lane, E.C.

## THE PHOTOGRAPHIC REPORTER.

PRICE ONE SHILLING.

CONTENTS FOR JUNE, 1891.

[NOW READY.]

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**Frontispiece.**—"The Bend of the River." E. B. WAIN. Supplement—"A Country Road in Essex." A. J. JEFFERY.

London: Hazell, Watson, and Viney, LD., 1, Creed Lane, E.C.



## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.*

OUR VIEWS.—Mr. Alf. Maskell and Mr. Burchett's replies to Mr. Pennell at the Camera Club; The Library at the Camera Club; more members wanted—AMATEUR PHOTOGRAPHER Competition No. 25, "Village Life, Farming," etc.—Mr. Bhedwar's Portraits of H. R. H. the Duke of Edinburgh—The Birkenhead Society—A Society for Great Grimsby—Exhibition at Amsterdam—The Fire at Mr. Lafayette's Establishment in Dublin—The Fourth Annual Exhibition at New York—A Society at Frome, President the Rev. H. B. Hare—The Convention to be invited to Edinburgh next year—The Convention Arrangements at Bath—*The Lady* on "Photography as a Recreation for Ladies"—"Notes on Perspective Drawing and Vision," by Dr. P. H. Emerson and T. F. Goodall.

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QUARTERLY EXAMINATIONS.

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and all those who saw the crowded state of the large room and withal the quite-at-home look of all present on Thursday, must be proud of the Club and its work. How much more must those feel who have worked early and late to build up the Club and secure for it a home which is unsurpassed either on the Continent or in America. The library, which has been built up through the energies of Mr. Lyonel Clark, is a most valuable section of the Club. Mr. Clark has got together many hundreds of volumes, many of them most valuable, for which he is indebted to individual members of the Club; still, the work of forming such a library has been a big task, one which Mr. Clark has brought to a successful issue, and it will remain for all time a testimony and monument of his untiring zeal for the well-being of the Camera Club.

There are probably still many of our readers who might, with advantage to themselves and benefit to the Club, become members. For their information we would say that the Committee are still prepared to receive a few more members at the reduced rate of subscriptions, viz., town members, £4 4s.; country, £2 2s.; and foreign members, £1 1s. In addition to the Club being the largest photographic club in the world, it has the distinct advantage of being a social club of the very first class—an additional inducement, no doubt, to many men interested in photography but who possibly are not members of other clubs. Mr. George Davison, the courteous Hon. Secretary, will gladly forward proposal forms and list of members to those who may write him at the Club-house, Charing Cross Road, London, W.C.

We are much disappointed with the photographs contributed to the AMATEUR PHOTOGRAPHER competition, No. 25, "Village Life, Farming, etc." There is really no picture up to first-prize standard; we shall therefore award no silver medal this month.

*Second Prize (Bronze Medal).*

MR. C. A. IRVINE .. .. Twickenham.

This competitor sends us "Life's Evening," a well-selected picture—an old lady sitting at her cottage door; the rendering of the subject is extremely simple, and that is the charm of the picture. Other photographs calling for note are "A Welcome Rest," Mr. A. James (Barry); "Sheep Washing on Skomer Island," Miss Claire Vaughan Davis (Skomer); "A Village Smith," Mr. Martin S. Davis (Fleetwood); "Practising for the Harvest Home," Mr. G.

MUCH interest was evinced by members and those who were invited to attend the "Thursday Evening" at the Camera Club last week, when Mr. Alfred Maskell and Mr. Arthur Burchett read carefully prepared papers answering Mr. Pennell's paper, read at the Camera Club Conference, on "Photography as a Hindrance and a Help to Art." The matter is dealt with in another column, and we only draw attention to the subject here to note how strongly the readers of the papers and the several speakers who took part in the discussion persisted that photography had established a claim to be considered a "help to art." Mr. Pennell's reply was long and tiresome. He did not strengthen his claim that "photography was a hindrance to art," and his utter want of knowledge of even elementary principles of photography provoked much laughter. Argument he had none, and resorted to the time-honoured or dishonoured practice of "abuse the plaintiff." It is, we think, to be regretted that the Camera Club should have given Mr. Pennell another opportunity of letting the world know how little he knew either whether "photography was a help or a hindrance to art."

THE Camera Club in its new home is an immense success,



A. Carruthers (Liscard); "Ploughing, Pau," by Mrs. Annesley (Pau); and "The Sage, the Swain, and the Sweetheart," Rev. R. C. Macleod.

All the pictures sent in will be commented upon in the *Photographic Reporter*.

Mr. SHAPOOR N. BHEDWAR has kindly given us an opportunity of inspecting the portraits of H.R.H. the Duke of Edinburgh, who, as we noted last week, honoured him with a sitting. We have seen three of a series of six taken, and can only say they are admirable, both as portraits and examples of photographic technique. They have not been retouched, and were all taken during a very short sitting. The Duke has expressed himself most delighted with the portraits, and it is more than likely that Mr. Bhedwar will receive a command to photograph the Queen. This will be indeed greatly appreciated by Mr. Bhedwar, who, as most of our readers know, is a Parsee, and who in this country has for the last two years practised as an amateur, but now he is returning to Bombay to commence business. The mere fact of one of the Royal Dukes having sat to him will help to secure him patronage, but to have photographed the Empress of India will indeed prove to his brothers in the East how highly his talent for photography has been appreciated in this country. Mr. Bhedwar has won the hearts of many whilst in England, due to his modest, simple, and withal courtly bearing. We can only hope that the honours, medals, and distinctions which he has gained will enable him to elevate photography as an art in Bombay. Of this we are sure, he will never rest satisfied to turn out from his *atelier* any but the very best work.

THE programme of arrangements on Thursday evening for the members of the Birkenhead Photographic Association included a paper by the President, Mr. G. E. Thompson, entitled "Experientia Docet," which was to be followed by a lecture by Mr. Charles Sharp on "Authors and Artists at Play." This association has a very extensive membership, and much good work is done by them.

EVERY week new societies. Last week we told of a photographic society being started at Macclesfield; this week a letter reaches us from Great Grimsby, from which we gather that the amateur photographers are to have a club at last. They have for some time been contemplating the formation of a club or society, but now it seems that the Grimsby Cyclists' Club intend to establish a photographic section. This club numbers more than 300 members, and have a club-house in which a commodious dark-room is being fitted up, and every effort will be made to have a first-class photographic section. We shall be able to give more particulars at an early date.

THE exhibition at Amsterdam, to which we have already called attention, will be held in September. It will be divided into three sections—professionals, amateurs, and apparatus. In each of the former sections there will be six classes, and in the latter two classes only. All photographs must reach Amsterdam on or before the 1st of September. In the professional classes medals and diplomas will be given, but in the classes restricted to the work of amateur photographers, medals only will be given. Full particulars may be obtained of Mr. C. J. Schuwer, 72, Hoofstraat, Amsterdam.

WE learn from a correspondent that the recent fire at Mr. Lafayette's establishment in Dublin was not at all so destruc-

tive to property—although two firemen, unfortunately, lost their lives—as was at first believed. The valuable stock of negatives of Royalty and others, was uninjured, being stored at the printing works a little way out of town.

A CORRESPONDENT has kindly sent us a few lines upon the Fourth Annual Exhibition held in New York, under the auspices of the Society of Amateur Photographers of that city, which was opened on the 24th of May. He says—

"The Exhibition is way ahead of anything ever shown in New York before, the great success being due chiefly to the untiring energy of the Secretary, Mr. Beach.

"The English exhibitors are: Mr. and Mrs. Anckorn, John E. Austin, George Bethune, F. P. Cembrano, Mr. S. F. Clarke, Mrs. S. F. Clarke, C. Court-Cole, Adam Diston, A. R. Dresser, Jos. Elliot, J. P. Gibson, Martin J. Harding, J. H. Harvey, Hedges and Sons, R. Keene, Nelson King, Edgar G. Lee, Louis Meldon, Thos. Mansell, D. Pym, H. P. Robinson, L. Sawyer, F. M. Sutcliffe, H. Symmonds, Tagliaferro, Harry Tolley, Werner and Son, Wilson and Sons, etc.

"The awards are—For Photographs: F. Sutcliffe, Gibson, Robinson, Court-Cole, Diston, Keene, Cembrano, Harding, Redfield (Philadelphia), A. Clements (Philadelphia), Jackson (Denver), Alfred Steiglitz (New York), C. Berg (New York), James Breese (New York), E. Lincoln (Massachusetts), Tarbell (New York), G. Nelson (Lowell). For Slides: Dr. Mitchell (Philadelphia), Miss Barnes (New York), and Wilson and Sons (England)."

THE veteran amateur photographer, the Rev. H. B. Hare, writes us that a photographic society has been formed at Frome. We are pleased to note from a local paper that Mr. Hare has been unanimously elected the first President of the society, which has already a considerable number of members. Dr. A. W. Dalby has consented to act as Hon. Secretary; the society is open to both ladies and gentlemen, professional photographers are admitted at a reduced rate of subscription. The society will have one great advantage in the help and aid of their enthusiastic President, a gentleman who has practised photography for many years, and under whose guidance we feel sure the society will be a marked success.

EVERY one will be delighted to hear that the Edinburgh Photographic Society are going to invite the Photographic Convention of the United Kingdom to visit Auld Reekie next year.

THE Exhibition Sub-Committee of the Convention are very anxious to get together a thoroughly representative exhibition of apparatus, etc., at Bath. They ask for such articles as hand-cameras; apparatus for taking photographs in rapid succession; photo-micrographic apparatus; balloon and military photography; flashlight apparatus; apparatus designed for special work, as medical, underground, etc.; optical lanterns and fittings; photometrical apparatus and the like; apparatus for, and specimens of, astronomical and meteorological photography. The committee is small, though a strong one—Messrs. G. Davison, Friese Greene, Andrew Pringle, and Henry Sturmeay. Their appeal will not, we are sure, be in vain, and we do hope that there will be a first-class show of photographic impedimenta and specimens of work done. No attempt is made to have a show of pictures, we believe. All exhibits must reach the Guildhall, Bath, not later than the 4th of July, addressed to the Convention.

WHEN a society paper begins to write on matters photographic, we expect some curious statements; but when a paper publishes a series of articles on this subject, one supposes them to have been written by someone not absolutely ignorant of the first principles. In last week's issue of *The Lady*, we note the conclusion of an article on "Photography as a Recreation for Ladies," by "Sol," which tells the readers



how to print. The author states that hyposulphate of soda is one of the necessary articles, and then goes on to inform us that "we next open the back and place the negative with the prepared surface uppermost at the bottom of the frame. A piece of sensitised paper, cut to the size, should then be laid flat on the glass, remembering *that the sensitised surface is in contact with the glass.*" We were always under the impression that the sensitive surface should be in contact with the film. Probably, however, ladies do not work this way. The formula for the borax bath is given as follows:—

Borax pulv.	..	..	..	..	1 oz.
Water (boiling)	..	..	..	..	20 "
Gold	..	..	..	..	2 dr.

and the unfortunate tyro is told to let it get quite cold before use. Probably the author has discovered that gold is soluble in an aqueous solution of borax. We were under the impression that *aqua regia* was the best solvent. The last straw, however, is the formula for the fixing bath, which is as follows:—

"Hyposulphate of soda	..	..	..	5 oz.
Liquor ammonia	..	..	..	2 dr.
Water	..	..	..	3 oz.

When the soda has quite dissolved, pour this solution into another dish." Poor, unfortunate tyro! Five ounces of hypo, and only 3 oz. of water to dissolve it in! We can do a good deal, but even this is beyond us, and the poor print, in what condition would it be after fifteen minutes' immersion? The author concludes by saying, "To excel in photography is only achieved by constant practice, and, as I have already said, dogged perseverance." Quite so!

At the moment of going to press we have received a pamphlet, the joint work of Dr. P. H. Emerson and T. F. Goodall, "Notes on Perspective Drawing and Vision."\* At the present time the subject is one of peculiar interest, and many will doubtless wish to make themselves acquainted with the opinions set forth. We have not space this week to publish the text which Dr. Emerson has courteously placed at our disposal, but we cannot help quoting the concluding paragraph:—

"*Final.*—Having shown how we see forms, it only remains to say that a mathematical perspective drawing, or the drawing of an aplastic photographic lens, does not give forms as we see them. They are altogether false to the visual impression of the proportion of things, and therefore give a wrong idea of the original scene. On the other hand, a perspective drawing, or correct photograph, gives the *actual facts* scientifically, *i.e.*, the pillars of the temple as leaning, the paper in experiment as *square*. All such drawings are, therefore, purely scientific diagrams, and artists, who wish to render what they see, must not rely upon them."

From this it will be seen that Mr. Pennell has a champion, and the question of perspective and photography finds yet one more exponent.

### HOME PORTRAITURE.

We have now reached the last stage of our hints on photography at home, and include a few hints on the faking of negatives and choice of printing processes. A rough proof should be taken from the negative as soon as perfectly dry, and the proof toned and fixed; we are now in a position to find faults and defects. If the shadow side of the face is too dark it will be found advisable to coat the back of the negative with pale yellow matt varnish, or even to work on the film side with a little retouching medium and powdered graphite, manipulating with a stump.

Pinholes may be easily stopped out and, if necessary, a little black speck on the film, which gives a white spot on the print, can be easily eradicated by carefully manipulating a needle inserted in a penholder. Of actual retouching, we do not intend to speak, further than to strongly recommend any one desirous of entering this by no means difficult branch of practical work to study No. 5 of the "AMATEUR PHOTOGRAPHER Handbooks," and then practice what is there taught. It has been said that a successful retoucher must be an artist and an anatomist. Possibly this is true, but anyone with a little practice can learn sufficient retouching to be able to soften down glaring freckles and other defects, natural or appertaining to the process.

Negatives should be varnished before proceeding to actual printing, and although this is too frequently a bugbear to the amateur, it is, like everything else, merely a question of practice. We hope during the next few weeks to be able to give some practical hints on varnishing, so must defer any longer notice for the present.

The choice of printing process is always a difficult one. Many sitters who are ignorant of photography prefer the ordinary albumen print, merely because they have never seen any other process. For small work such as cartes-de-visite, gelatino-chloride paper, Obernetter or Celerotype, white, will give good results, but for larger work, such as cabinets, whole-plates, etc., a matt-surface paper is far superior. To this category belong matt-surface Obernetter or Celerotype, rough bromide paper, printing-out platinotype, the ordinary platinotype, and kallitype. In choosing a process we must look at the character of the negative. Thus for a flat, thin negative a gelatino-chloride paper should be used, as this tends to increase of contrast; for a plucky negative with decided contrasts this paper should be avoided, and a rapid bromide paper, platinotype, or kallitype used. Vignetting is by no means difficult, and, in some cases, of advantage for cutting off unnecessary details in the backgrounds, etc., but it should be well done to be effective. Then again, the character of the vignette should be chosen in accordance with the style and character of the picture. Thus, a sitter in a white dress against a dark background should be vignettied, not with the margins white, which would detract from the high lights of the picture, but the edges should shade off darker, which is obviously done by shading the centre from the action of light and allowing the edges to blacken and bronze in the sun. A sitter in a dark dress against a light background may be vignettied in the usual way.

There are in the market some shapes, such as pots, fans, artists' palettes, etc., which are recommended for portraits. Our advice with regard to these is to have nothing to do with them; they certainly are not artistic, and the results are in some cases positively ludicrous.

For large work, such as whole-plate or enlargements from small negatives, we strongly recommend bromide paper, and have obtained exquisite results on Fry naturalistic bromide paper, whilst for a smoother surface, carbon gives some very fine results, and affords a good range of colours from the Bartolozzi red to black.

We have thus briefly run through our series of hints on Home Portraiture, and we must leave our readers to modify them by experience and practice. We have tried to point out certain pitfalls and faults into which we are all liable to fall, and we trust to see an improvement in technique in the prints sent in to our competition, "Photography at Home," which closes on the 30th of this month, and we should strongly recommend any and all of our readers to enter for this competition, as prints sent in will be criticised and suggestions for improvement made.

\* London: Warren Hall and Lovitt. Price 6d. (Messrs. Hazell, Watson, and Viney, Ltd., will forward copies on receipt of stamps.)



## The Construction and Use of Photographic Lenses.

BY CLEMENT J. LEAPER, F.C.S.,

*Instructor in Photography, City of Dublin Technical Schools.*

### CHAPTER V.—(Continued.)

#### ON TESTING PHOTOGRAPHIC LENSES.

##### (1) Focal Length, and Position of Nodal Points.

HERETOFORE we have assumed that all rays passing through a lens cross at the optical centre, but it must be evident that this can be true only when the lens is exceedingly thin. With photographic lenses as commonly made, there exist two fixed points, situated on the principal axis, and called nodal points of admission and emission, such that the rays coming from the object cross at the nodal point of admission, and having reached the nodal point of emission, again cross and emerge to form the image.

In fact, in the formula  $F = \frac{1}{f} + \frac{1}{f'}$ , so useful for many purposes, all distances are to be reckoned from these nodal points and not from the optical centre of the lens or from either of its surfaces.

It might at first sight seem from this that a non-symmetrical lens possessed two principal foci, but as a matter of fact the distance between the point at which parallel rays meet, and the nodal point of emission, using the lens in its usual position, is identical with the corresponding distance when the lens is reversed.

Since all rays forming the image of an object pass through the nodal point of emission, it follows that if a lens is rotated over this point as an axis, the image yielded by it cannot suffer displacement, and this fact affords a direct means of ascertaining the position of the node of emission when the lens is used in its ordinary position, and of that of admission when the lens is reversed. The position of the nodes with reference to any convenient fixed point on the lens having been thus ascertained, the distance between that point and the principal focus can be easily found, and the sum of these distances gives at once the focal length.

To carry out the process, a fine human hair is stretched over the back flange of the lens so as to lie across its diameter, and secured in position with a rubber band slipped over the flange.

The lens is then placed on its support on the optical bench, carefully centered with respect to the magnifier, and pointed towards some prominent object situated at a considerable and known distance from it, this object being then accurately focussed. If now the lens board is rotated through an angle of about 10 deg., and back again, the image will be displaced if the axis of rotation does not coincide with the nodal point of emission. Presuming that the image is displaced, the lens support is moved backwards and forwards until the image remains stationary, when the lens is rotated. When this occurs, the axis of rotation is over the node, and the distance from back flange to axis of rotation gives the position of the nodal point.

The position of the magnifier board on the scale having been read off, it is pushed forward until the hair stretched over the flange is in focus, when the difference between these two distances gives the distance of the principal focus from the hair or flange, and this distance taken from or added to as the case may be, the distance from the flange to the nodal point of emission gives the principal focus of the lens.

As a check, the lens is reversed, and the entire series of

operations repeated, when a result identical with the former one should be obtained.

It is useful after determining the focal length to find the angle of the field of visibility. This is readily done by tilting the lens until the image completely disappears, when twice the angle through which it has been moved gives the required measurement.

The following results obtained with a single landscape lens and a portrait lens of the Petzval type are appended as examples, both lenses being constructed to cover quarter-plate size:—

##### *Single Lens (Direct Position).*

Distance of nodal point of emission behind* back flange	16 inch.
Position of magnifier on scale with distant object in focus	29.84 inches.
Position of magnifier on scale with hair (or flange) in focus	24.32
Distance of principal focus from hair or flange	5.52 inches.
Distance of principal focus from nodal point of emission	5.52 - 16 = 5.36 ins.

##### *Single Lens (Reverse Position).*

Distance of nodal point of admission in front of back flange	16 inch.
Position of magnifier on scale with distant object in focus	29.52 inches.
Position of magnifier on scale with hair (or flange) in focus	24.30
Distance of principal focus from hair or flange	5.22 inches
Distance of principal focus from nodal point of admission	5.22 + 16 = 5.38 ins

It is evident, therefore, that the two nodes coincide, and that the P. F. is 5.37 inches if the object is at infinity. A correction must, however, be made for the distance of the object. This being 4,000 inches, we get  $\frac{5.37^2}{4,000} = .007$ , or, say, .01 inch, so that the true focal length is 5.36 inches.

##### *Portrait Lens (Direct Position).*

Distance of node of emission in front of back flange	2.08 inches.
Position of magnifier on scale with distance object in focus	26.64 inches.
Position of magnifier on scale with hair (or back flange) in focus	21.92
Distance of P. F. from hair or flange	4.72 inches.
Distance of P. F. from nodal point of emission	4.72 + 2.08 = 6.8 ins.

##### *Portrait Lens (Reverse Position).*

Distance of node of admission in front of front flange	1.76 inches.
Position of magnifier on scale with distance object in focus	27.36 inches.
Position of magnifier on scale with hair (or front flange) in focus	22.44
Distance of P. F. from hair or front flange	4.92 inches.
Distance of P. F. from nodal point of admission	4.92 + 1.76 = 6.68 ins.

Mean focal length, 6.74 inches, which less correction equals 6.73 inches. Since the measured distance between the two flanges, viz., 3.48 inches, is less than the sum of the distance of the two nodes from each flange, viz., 3.84,

\* The word "behind" refers to the *object*, i.e., the nodal point of emission is further behind the object than the back flange.



it is evident that these are crossed *i.e.*, that the node of admission is behind that of emission.

(2) *Extent, Depth, and Illumination of Field of Definition.*

Theoretically, it is impossible to obtain simultaneously an absolutely sharp image of objects situated at different distances from the front nodal point, but, practically, we content ourselves with calling an image sharp if the circles of confusion do not exceed a certain maximum. In other words, the lens may be moved to and fro or tilted through a certain angle without impairing the sharpness of the images formed by it. The angle through which the lens can be so tilted measures the angle of the field of definition, and the extent to which it can be moved to and fro measures its depth.

To measure the angle and depth of the field a small cap slides over the magnifier, open at one end, and carrying at the other a very thin glass plate, ruled with a diamond with two lines, one-fourth of an inch apart, at each side of which are two others  $\frac{1}{100}$  inch apart. This is moved to and fro until the lines are seen distinctly in the magnifier. Then, taking  $\frac{1}{100}$  inch as the limit of our circle of confusion, it is clear that an object is in focus which at twelve inches from the ruled lines fills, in the magnifier, either the pair of lines  $\frac{1}{100}$  inch, or those  $\frac{105}{400}$  (*i.e.*,  $\frac{1}{4} + \frac{1}{100}$ ) inch apart.

To measure the angle and depth of the field, the board shown in fig. 29 is placed on the bench and the lens arranged on its support, so that its node of emission is exactly over the axis of rotation, and twelve inches from the ruled glass in the

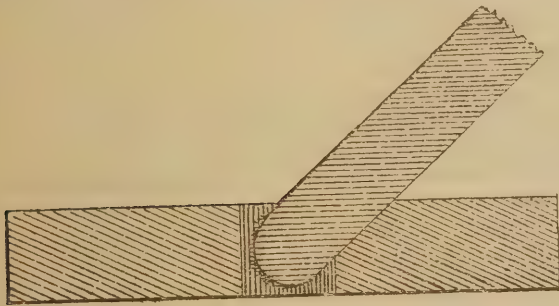


FIG. 29.

magnifier placed in the second support shown. The support carrying the movable slit is now moved backwards and (the axis of the two boards coinciding) forwards until the image of the slit is seen in sharp focus in the magnifier, and this done, the distance between the jaws of the slit is altered until the rectangle of light just fills the space between the lines  $\frac{1}{100}$  inch apart. The lens is then gradually rotated through angles of 5 degs. at a time, and the position of the image sought by moving the magnifier in the opposite direction. This is repeated until the image just fills the larger distance, *i.e.*,  $\frac{105}{400}$  inch between the ruled lines, when evidently twice the angle through which the lens has been tilted gives the angle of the field of definition, and the distance of the magnifier from its starting point gives the diagonal of the plate which the lens will cover with sharpness with the stop that is being used.

To measure the depth of the field, the lens and magnifier are brought back to their original positions, and the magnifier board is then moved backwards and forwards until the image filling a quarter of an inch in one position fills  $\frac{105}{400}$  inch in the other positions. Then evidently the entire distance through which the lens has been moved (*i.e.*, from its furthest to its nearest position) gives the depth of the field.

We may, in fact, look upon this field of definition as a

spherical shell subtending a certain angle, having a certain depth, and of a volume measured by

$$\frac{4}{3} \pi (r_1^3 - r_2^3) \sin^2 \frac{1}{4} A,$$

in which  $\pi = 3.1416$ ,  $r_1$  and  $r_2$ , the extreme limits through which the magnifier has been moved, and  $A$  the angle of the field. Since, however, both the angle and depth of definition vary with the stop and the focus, the volume of the field does not give us a comparative measure of the values of two lenses unless we take into account the actual illumination of the field.

Knowing, however, the focal length of the lens and the diameter of the stop employed when measuring the volume of the field, we get the illumination by squaring the ratio of focus to aperture expressed in the usual way, at all events if the lens is free from scratches, etc.

If the lens is a single one, the measured diameter of the stop gives its available aperture; if the lens is of the doublet form, the available aperture  $A$  is given by the equation

$A = \frac{p a}{p - d}$ , in which  $p$  equals the principal focus of the front lens of the combination,  $a$  the actual diameter of the aperture, and  $d$  the distance between stop and nodal point of emission of front lens.

Having obtained the volume of the field and its illumination, the product of these two quantities gives what we may call the photographic value of the field.

(3) *Spherical Aberration.*

To determine the presence of this and its amount, the lens is mounted as previously described and focussed with full aperture on fine cross wires placed at about ten times its focal distance. The smallest stop is then inserted, which, if spherical aberration is absent, will cause no alteration in sharpness.

If, however, spherical aberration is present, it will be found that the cross wires in good focus with full aperture will now be out of focus, and to restore the sharpness the magnifier will have to be moved further back. Calling the first position of the magnifier  $d_1$  and its second position  $d_2$ , and the focal length of the lens  $F$ , the amount of longitudinal spherical aberration,  $S$ , is given by the equation

$$S = \frac{F [(d - F) - (d_1 - F)]}{(d - F) d_1 - F}$$

To be comparative, the test must be made upon lenses stopped down to the same extent, say from  $f/10$  to  $f/40$ , and invariably placed at a definite multiple of their focal length from the cross wires. If the lens is a simple one, the diameters of the stops would be one-tenth and one-fortieth of the focal length; but if the lens is a doublet, the diameter of the larger stop is given by  $\frac{p-d}{10p}$ , and that of the smaller by  $\frac{p-d}{40p}$ , in which  $p$  equals focal length of front combination, and  $d$  distance between stop and nodal point of emission of front lens.

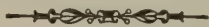
(4) *Distortion and Chromatic Aberration.*

To prove the presence of distortion, mount the lens on the optical bench, so that the axis of rotation coincides with its nodal point of emission, and laterally displace it through an arc of 10 degs. whilst examining in the magnifier the image of two parallel lines about six inches apart placed in front of the lens at a distance equal to ten times its focal length. If the two images are seen to diverge at the top, pin-cushion-shaped distortion is present; if they converge at the top, the lens gives barrel-shaped distortion.

To test for chromatic aberration, the lens is arranged in



front of a slit,  $2 \times .04$  inches, made in a piece of blackened tin plate, and provided with two very fine cross wires. The slit itself facing the clear sky, the image of the cross wires is focussed in the usual way, and this done the magnifier is replaced by a small direct vision spectroscope so arranged that the image formed at the focus of the magnifier is also at the focus of the spectroscope. If the lens is not achromatic, only one portion of the spectrum will be in focus; if it is achromatic, two portions, viz., the blue and the violet, will be seen distinctly at one and the same time.



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XVI.—Continued.

#### BEST FOCAL LENGTHS OF LENSES FOR INSTANTANEOUS WORK.

EXPERIENCE teaches us that the lens which is most serviceable for instantaneous work should have a focal length not less than the longer side of the plate employed, nor greater than one and a half times that side. Thus, for a quarter-plate, the best focus lens lies between  $4\frac{1}{2}$  inches and  $6\frac{5}{8}$  inches. Almost exactly half-way between these measures lies the lens of  $5\frac{1}{2}$  inches focal length; and that is the lens which we prefer to use upon a quarter plate.

Table of focal lengths of lenses recommended for instantaneous work upon plates of different sizes:

Quarter plate	.....	= $5\frac{1}{2}$ inches.
5 by 4	"	$6\frac{1}{4}$ "
Half	"	8 "
Whole	"	11 "
10 by 8	"	$12\frac{1}{2}$ "
12 by 10	"	15 "
15 by 12	"	19 "
24 by 20	"	30 "

But in each case—and especially for the smallest size—we must confess to a liking for a lens which will cover a size larger than the plate which is employed. We are in the habit of using a lens of  $5\frac{1}{2}$  inches focus (a lens which covers a plate 5 by 4 inches) upon a quarter-plate, and this gives us complete satisfaction.

**Fixed Focus Lenses.**—There is no such thing as a "fixed focus" lens. Several makers of hand cameras advertise them as fitted with a "fixed focus lens," by which they mean (or their customers understand) a lens which is in focus for all objects, no matter what their distance from the camera, or at least in focus for objects which are not nearer the camera than a certain specified distance, usually about 12 or 15 feet.

But the mathematician and the optician tell us—and our common sense agrees with them—that a "fixed focus" lens is an impossibility. Every point in an object which is "in focus" is reproduced by a point in the image.

Let us set up a number of large printed letters—say the twenty-six letters of the alphabet—one behind the other, and at a distance of (say) three inches apart. Let each letter be raised a little above the one in front of it, so that all can be seen at the same time upon the focussing glass. With open aperture (*i.e.* the largest stop which the lens permits of) carefully focus the middle letter (say M), and expose a plate. We will suppose the lens to be one of the highest quality, and that the distance of the camera—a quarter-plate—is about twelve feet from the letter focussed.

When the plate is developed and carefully examined through a magnifying glass, the letter focussed upon (M), and that letter only, will be strictly sharp and well defined.

Both L (nearer the camera) and N (farther away) will be slightly blurred; and the outlines of the other letters will be more and more diffused and hazy as their distance from M increases.

It is only possible to have one plane of the picture in perfect focus. In the case just described, there are twenty-six planes, separated from one another by the distance of three inches. Now, twenty-five of these planes *must* be more or less "out of focus."

But perhaps the reader will say, "Oh, but by inserting a small stop I can get *several* of the letters—say two or three on each side of M—in focus." We will admit that they may be obtained in *better* focus—more clearly defined than when the largest stop was used—but to have them in the same *perfect* focus as M, is impossible; and examination with a microscope will prove this. Of course, there are plenty of inferior lenses which will not focus even *any* one plane perfectly: with these, no doubt several planes will appear in "equally good focus." The fact is, such lenses have *no focus at all*; for there is only one focus for a perfect lens and a given object. We have not space here to treat of the laws of optics; but reference to any text-book will prove our statement to be correct.

**Practical Sharpness.—Discs of Confusion.**—When the image produced by a lens is "perfectly sharp," every point in the object is represented by a point in the image. Now our eyes are not microscopes, and it is found, in practice, that if any point in the object be represented in the image by a dot or circle, whose diameter is not greater than the two-hundred-and-fiftieth part of an inch, it cannot be distinguished from a point. Moreover, it is found that if the diameter of the circle or dot be as much as the one-hundredth part of an inch, the image yet appears reasonably "sharp," distinct, and "in fair focus."

But when the circles or discs, which in the image represent points in the object, begin to exceed the hundredth part of an inch in diameter, then they markedly overlap and interfere with one another, and the image appears blurred and confused. Hence these circles (representing points) are called *discs of confusion*.

It is for this reason—that the discs of confusion do not exceed the hundredth part of an inch in diameter—that we are able to obtain photographs which, to our eyes, appear "sharp all over" and "in focus in every plane." The fact is, that only one plane can be in *perfect focus*; but the blurring of objects in the other planes is so slight that our eyes do not detect it.

**Testing Lenses.**—There are only about eight firms in England who are actual makers of photographic lenses. By purchasing from one of these firms you have the practical security of getting a satisfactory article; and further, should you at any time wish to dispose of your lens, you will not have much difficulty in getting a fair price—say about two-thirds of the amount which you gave for it. Great numbers of cheap lenses are imported from France; and while these are generally good value for the money, it is impossible that they can be of the same uniform excellence and reliability as the productions of an English house of good standing.

Yet it is a rather surprising fact that the lenses of even our best makers are not always to be relied upon in the figures as to focal length, ratio of stops, etc. Thus the focus of a whole-plate lens is given in the maker's catalogue as eleven inches, whereas careful measurement shows it to be really  $10\frac{5}{8}$  inches. This of course affects the relationship of all the stops; but when the stops come to be measured, it is found that they agree with neither the one nor the other focal length; the stop marked  $f/8$  is really  $f/9$ , and so on. Such errors may be thought small and unimportant, but



they introduce an element of inexactness which affects every exposure and every application of the lens.

At the Camera Club Conferences of 1888 and 1889 I proposed that Kew Observatory should undertake the testing of photographic lenses, just as for many years it had tested barometers, thermometers, and other scientific instruments. The matter has been taken up by Mr. G. M. Whipple, the able Superintendent of the Observatory, and plans have now been completed by which any lens can be tested, and an official certificate or warranty given with respect to its performance. For a fee of half-a-guinea the following information with respect to a lens is given:— (1) Equivalent focus (= focal length of lens); (2) ratio of diameter of each stop to the focal length (these are the "f" numbers); (3) angle of field of view, and size of plate effectively illuminated; (4) number of external reflecting surfaces; (5) coincidence of visual and chemical foci; (6) presence of flare-spot; (7) workmanship of surfaces, structure and degree of transparency of glass; (8) centring in mount; (9) defining power; (10) relative quality of illumination in different parts of field; (11) amount of astigmatism or optical distortion.

For a fee of half-a-crown a certificate is given, stating:— (1) The equivalent focus (= focal length); (2) size of effective aperture of lens with largest stop; (3) angle of field of view; (4) size of plate effectively illuminated; (5) coincidence of visual and chemical foci.

Applications for forms of entry are to be made to the Superintendent, Kew Observatory, Old Deer Park, Richmond, Surrey (endorsed "Test Department").

It is earnestly to be hoped that purchasers of high-class lenses will insist on having a "Kew certificate" with each lens. At the Camera Club Conference of 1888, to which we have already alluded, Mr. Dallmeyer said that "as an optician he would be quite willing to have his lenses tested by the Government, as proposed by Mr. Harrison. He was quite as anxious to turn out first-class work as the public was to buy it;" and we believe this to be the attitude of all our bona-fide lens-making firms on the question.

(To be continued.)

## Our Contemporaries.

The *New York Times* says:—"From a letter of inquiry received at the Treasury Department it is inferred that some persons think the copyrighting here of a photographic reproduction of a foreign painting or other work of art bars any later coming from the privilege of photographing the same thing and copyrighting his works. Librarian of Congress, Mr. Spofford, who issues all copyrights, said that this was a decided mistake. Any person who chooses to secure a copyright of a photograph of the work of a foreign artist can do so by making application and paying the fee. That will prevent any other person from reproducing the copyrighted photograph, but it does not hinder anybody from taking an exactly similar photograph of the same painting and getting his photograph copyrighted. Mr. Spofford said that his duty in issuing copyrights was purely ministerial, and he has nothing to do with the question of infringements. But he is of course, thoroughly familiar with copyright law. Mr. Spofford pointed out that the uniform decisions of the courts have been that infringement of copyright is the appropriation of the work of the person protected by copyright. The copyrighting of a city directory, for example, prohibits any other publisher from taking the names from the directory and publishing them, but it does not prevent him from collecting the same names, publishing them in the same alphabetical order, and obtain a copyright for his work. So the person seeking to copyright a photograph must not, by reproducing some other person's photograph, appropriate that person's work. He must take the photograph himself. The new copyright law makes no change in this respect."

*Wilson's Photographic Magazine*, speaking of "the permanency

of collodio-chloride photographs," says:—"There seems to be a misapprehension abroad, that because the body of the image is all close to the surface, that therefore there is not enough of it to stand the ravages of light and air. This mistake has arisen from the evident fact that in some of the porcelain prints there was not enough silver and gold to make a permanent picture; this was the mistake of the photographer. In albumen printing, if he did not give a sufficient body of chloride of silver to make a strong picture, he was confronted with unbearable measles, and when he took hold of the porcelain work he found he could produce a print of infinite delicacy without a trace of measles, and so ran to the other extremity, and forgot that there was enough deleterious matter in the air to speedily destroy the homœopathic attenuation of silver and gold which gave him this delicacy. This swing of the pendulum has brought so much discredit on porcelains that it is doubtful if they will ever become popular in this country, while in England, I am informed on reliable authority, that neither porcelains nor collodio-chlorides on paper fade, except in cases of careless manipulation, and these cases have not been so frequent as to bring that class of pictures into disrepute, but, on the contrary, they are held in the highest esteem by that most critical of all classes—the British aristocracy. It certainly is possible to make very nice looking collodio-chloride prints on paper with such a very slight reduction of the halogen salt that the fixed print will fade rapidly, but it is not necessary, nor even easy. The delicacies of the values is due not to the thinness of the silver deposit but to the fact that it is concentrated on or very near to the smooth surface."

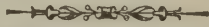
*Invention* says: "A platinum mirror which has the peculiar property of both transmitting and reflecting light is noticed in *La Nature*. Behind the mirror is placed a movable panel or shutter, and between this panel and the glass a picture or photograph. When the panel is opened the reflection disappears, and the picture or photograph appears. These platinum mirrors may be used for other purposes. Placed in the panels of doors, they will light up a corridor or a gloomy room, and on the other side they form mirrors, so that, standing on the reverse side—that is, the platinised side—one can see through the glass without being seen. *La Nature* gives the formula for the preparation of platinum solution."

*Anthony's Photographic Bulletin* says: "The following method is recommended for obtaining a glacé finish on albumen prints without the aid of gelatine. A glass plate is coated with a mixture of ox gall and alcohol in equal parts, which has first been allowed to stand for several days with repeated shakings, and finally filtered. The washed albumen print is then placed in contact and squeezed down, and after drying for about an hour will come off with a beautiful glazed surface. If the print is to be mounted and the gloss retained, it should be covered as soon as transferred to the glass, with a sheet of parchment paper somewhat larger than the print, previously coated with starch paste, and then treated on the back with a good coat of gum or dextrine. It may then, when dry and removed from the glass, be placed in contact with a moistened cardboard, and subjected to pressure."

*Engineering*, speaking of "Photographic Surveying," says:—"From a recent paper by Lieutenant Reed, of the United States Artillery, we learn that photography has been largely used for surveying in Canada under the direction of Mr. E. Deville, the Surveyor-General. The Dominion survey made in the ordinary way proved very expensive and slow when the Rocky Mountains were reached, and photography was accordingly resorted to. The camera used was a carefully made mahogany, brass bound, rectangular box, half plate size; and, in use, was placed on a tripod furnished with levelling screws, and levelled by means of two ordinary tube levels attached at right angles to each other and which could be placed on that face of the camera which happened to be uppermost. The means for determining the horizon and principal lines were the images of four fine combs, one midway on each side, attached to the camera immediately in front of the plate—the use of small stops making these images clear. The lens used was a Dallmeyer wide angle, No. 1 A, of  $5\frac{1}{2}$  in. focus, affording a horizontal angle of 60 deg. when the plate was disposed with its longer edge horizontal. Six double plateholders were employed. But one adjustment of this camera is required, viz., to insure the verticality of the plate when the tube levels indicate that the camera is level. The best way to effect this is to substitute for the plate a good plane mirror, face to the rear; then



set up a transit in the vicinity; the axis of the telescope being horizontal, observe a distant point intersected by the cross wires, also its image in the mirror; if the latter is also intersected, the mirror is vertical; if not, then the tube levels need adjustment. This box camera being rigid, and the focus therefore "permanent" and suited to distant views, and the lines on the faces indicating the field of view, no ground glass or cloth is needed. Care is taken to make the plateholders exactly alike, a condition which, so far as distance from lens to plate is concerned, is ascertained by measurement. Orthochromatic gelatine plates give the best results. Dr. Deville considers that a survey made this way is as accurate as a plan plotted with a very good protractor or made with a plane table. A good deal of attention has been devoted to the subject in France by Dr. Gustave le Bon, who has shown how to obtain all the survey details from a single photograph, and one compass observation, provided any one distance contained in the photograph is known."



## Notes from the Edinburgh Centre.

(From Our Own Correspondent.)

CONTRARY to custom and to expectation also, there was a good attendance at the closing meeting for the season of the Edinburgh Photographic Society, on 3rd inst. Mr. H. J. Blanc, the President, was in the chair, and according to the recently adopted rule, he at once called upon Mr. J. M. Turnbull to introduce the subject of "Printing Out Platinum Papers." Mr. Turnbull said it was long the reproach of photography that the silver was the only process of printing, and that the results were not permanent. There was no doubt that, with all its beauty, silver printing was not permanent. The carbon process was for a long time looked upon as a process of printing which gave permanent results, and which no doubt it did, but it had not held the field. The metal platinum, it was thought, would give permanency, and after a good deal of effort, Willis, in 1874, patented his platinum process, and the Platinotype Company's products came into the market. They gave most beautiful results, but were somewhat difficult to work, because of their tendency to succumb to the least trace of damp. He had with him a number of specimens in printing-out platinum papers, which were worked by a process a good deal different from that of the Platinotype Company. This paper contained, as it were, the developer within itself, being charged with a ferric salt. After it got the light, a little moisture and heat accelerated it. When the image came out a little more than was wanted, it was cleared by a little hydrochloric acid and water. That was all that was required. The process was so simple, that one who knew almost nothing of photographic printing could do it without difficulty. The first paper brought out by Pizzighelli was not very good, but it had now been very much improved. He showed specimens of printing upon various papers, including Dr. Jacoby's, and Hardcastle's, of Brighton, with, by contrast, to show the fine results got upon printing-out platinum papers, several of the same subjects upon silver paper.

Mr. J. M'Glashan said he had used these printing-out papers. When he began he did not get very good results, he supposed because he followed the instructions on the paper. He found that if he printed the paper as dry as possible, he got by far the best results.

Mr. J. R. Roddick, in giving his experience, said he always found that on a very bright day the blacks were richer and purer than on a dull day.

Mr. Turnbull, in closing the discussion, referred to remarks which had been made regarding the unreliability of some of the printing-out papers, and said that on account of its not being floated, but having the solution painted upon it with a brush, inequalities were apt to arise, but that seemed to have been overcome by coating the paper several times and allowing it to dry between. Printing the paper dry had this drawback, that they could not tell what depth the image would assume when moistened, and they might spoil a few prints. The moisture which he spoke of as necessary was very slight, and not so much as would make the paper adhere to the negative.

The Chairman thought the process a very simple and valuable one, and it was certainly an advantage to them to have the experience of Mr. Turnbull and Mr. M'Glashan on the subject.

Mr. W. Dundas Todd was then called upon to introduce the sub-

ject of "Exposure Tables and Meters." He had, he said, set himself to become possessed of everything relating to his subject that was advertised, and he found that only one of them gave complete instructions as to the use of the meter; the others were all blank. He found also that two of the tables gave different times for the same plates, and therefore, if the one was right, the other must be wrong. One of the meters he described as about the most awkward thing he ever handled in his life, and therefore he could not recommend it. Another, which worked by a strip of sensitised paper, and had a card along with it, from which the exposure could be found, would work fairly well. Another meter, working by a strip of sensitised paper also, and giving all the calculations upon itself, he found to be absolutely reliable. "If," said Mr. Todd, "you want a really reliable instrument, one that you can use any time of the day, or night almost, go in for —s." (I think it would be unfair to other manufacturers to give a free advertisement here to one maker.)

The Chairman thought the meters did no more than could be equalled by the practical instincts of any decent workman. At their recent outdoor meeting at Inverkeithing he made what he thought was a blunder in giving three seconds exposure, and he exposed another plate, giving it only one and a half seconds. He produced the two negatives at the meeting that night, and said they could scarcely tell which had the longer and which the shorter exposure. The conditions of light were the same in each, and the developer was the same (hydroquinone). A meter he looked upon as an encumbrance.

Mr. Turnbull could scarcely agree with the Chairman about the two negatives he showed. It was quite easy for the practised eye to tell which had the longer exposure. He warned the members against using the same developer more than once. Every time it was used weakened it. It was just as if a man who had run a mile were asked immediately to run another; he was not so able to do it. They would find it very poor economy to save developer at the expense of plates. He thought that the photographer who was always taking views could do without a meter, but one who only went out occasionally could not be aware of the quality of the light, and for him a meter might be useful.

After several questions had been put and answered, Mr. Todd, in replying, said he once doubted the efficacy of meters, but he did not any longer. He was prepared to go out with anyone and expose half a dozen plates, by meter, against theirs without meter, and he would put them all into the same developer, and he knew what the result would be.

In reply to this, the Chairman said he had recently exposed about 230 plates, and had only about fifteen failures, and he was quite prepared to take his own experience rather than indulge in a meter.

The Chairman then intimated that their next outdoor ramble would be on Saturday, the 6th. He asked that the members attending these meetings should contribute a copy of whatever they took, to be placed in a society album. Such an album would be found very interesting as years went on. They might establish a series of albums which could be exchanged with other societies. He understood an appeal had been made by a society in Australia for an exchange of photographs with them, and he was sure such an exchange would be very interesting. This very sensible announcement was received with much gratification, and doubtless the members will do their best to oblige the President in this matter.

The Chairman then introduced the proposal to invite the Photographic Convention of Great Britain to meet in Edinburgh in 1892, and moved that the Society vote £10 towards a guarantee fund. He did not hesitate to say, he said, that it would be a very desirable thing to have next year's meeting of the Convention in Edinburgh.

The Secretary reported that he had inquired in Glasgow as to the arrangements which were made there for the Convention meeting some years ago, and he stated shortly what these were, after which the Chairman's motion was agreed to.

On the motion of Mr. W. Brown, seconded by Mr. J. M. Turnbull, it was resolved to extend the proposed invitation to the Convention, and the Council of the Society were empowered to appoint one or two of their number to attend this year's Convention and convey the invitation. The proceedings were most cordial.

Since the advent of photography, astronomy, which was one of the exact sciences before, has been made more exact still. It



was my good fortune on Saturday last to be an eye-witness of the movements of Mr. Wm. Peck, the City Astronomer of Edinburgh, and his assistants, in their observation of the eclipse of the sun. The observations were almost exclusively confined to photographing the eclipsed sun at intervals of a few minutes, by means of a 13 in. equatorial telescope, which was driven by clock-work so as to keep the sun always in the field. As many as twenty exposures were made upon ordinary half-plates. The sky was clear, and the light being if anything, too strong, very slow plates were used. The photographs are, of course, intended for purposes of measurement. Mr. Peck is—as every astronomer must now perforce be—an adept amateur photographer, and has produced some charming views of the moon.

On the same afternoon the members of the Edinburgh Photographic Society were holding their second outdoor ramble. I am afraid there is not an astronomer on the council of the Society, else an afternoon upon which there was to be an eclipse would not have been selected for the ramble, but as it was the light was excellent, only a fourth of the sun's surface being obscured, and the conditions were consequently very favourable for doing good work.

## Thursday Evenings at the Camera Club.

BY ONE OF OUR STAFF.

CAPTAIN Abney occupied the chair on the 4th, as it was right he should do, as Mr. Maskell was to read a paper in reply to that of Mr. Joseph Pennell at the Conference, when the Captain also presided. Mr. Maskell selected, for the title of his paper, "The Claims of Photography to Recognition as Art;" it was somewhat long, but extremely interesting, and though it did not profess to go so exhaustively into the subject as to fully prove its case, what was presented gave a broad hint of the still greater weight of evidence which could be brought forward on a future occasion. The reader pointed out that the extent of ground to be covered in an argument which had for its object the establishment of a claim on the part of photography to artistic recognition was so great that the temptation to wander into side issues was almost irresistible. He should endeavour to confine himself, therefore, to a few of the principal considerations which he ventured to submit to Mr. Pennell's criticism, in the hope that they might at least achieve something towards abating in his mind, and in the minds of those who think with him, their attitude of uncompromising hostility. If the paper read at the Conference were taken, they would find that the strictures on photography as an art were not very numerous, and they might be summarised as follows:—1st. Photography is not a fine art, and never can be. 2nd. The photographer uses an unintelligent machine. 3rd. The nearer a machine-made photograph seeks to approach artistically-produced art, the more glaring are its defects and the more evident its shortcomings. 4th. Photography never does, and never can make selection. 5th. Photographic perspective is wrong—from the artistic standpoint. 6th. The painter's tools are everything to him, and the photographer tries to make a machine equal them, and does not succeed. 7th. Photography is incapable of correctly rendering tones or values. 8th. It is a mechanical method, and therefore not art. 9th. It is incapable of individual expression, and consequently cannot produce a work of art. These were the principal heads of his accusation, and, of them all, the most important was the last one which he had stated, viz., that photography was incapable of individuality. It was upon the refutation of this assumption that he would rest his case, for it was upon this point that photography as an art must stand or fall. The reader dealt with these points seriatim. He said that it was charged that poetry was mechanical. "Mechanical—to a certain extent, yes, but it is mechanism under control, and the advantage is that Nature herself, by the agency of light, in a mechanical manner forms the groundwork of the picture, and, if properly controlled, will effect this in such a way, with such delicate and true gradations of light and shade as would require the hand of the greatest master of the brush to rival. It is, therefore, no slur upon photography to say that it is mechanical, so long as the mechanism can be controlled by intelligence; on the contrary, it is a glory that by its means we can convert nature into a docile and obedient servant. The extent to which we can

control her measures our claim to be considered artists. I have before now attracted a certain amount of derision because I have asserted that a photographic picture is a better and more artistic production the less it bears resemblance to a photograph. Of course, such a statement must be intelligently understood; but it is true nevertheless. The art of being artistic in photography consists, in great measure, in concealing the method by which the effect is produced. It is the old story over again—'*Ars est celare artem*,' or, if I quote Mr. Whistler aright, a picture is finished when all trace of the method of making it has been lost. So with us, provided we have used the legitimate tools of our craft, it is a merit if the result does not show on the face of it—boldly, broadly, brazen-like asserting itself—the means employed. Let those sneer who will; it is a legitimate pleasure to hear it said that one's work in photography is not photographic. We are told that the photographer uses an unintelligent machine. Well—the brush and the palette, are they intelligent? Of course, in both cases, the intelligence is, or should be, in the user. I will not say I am prepared to accept Mr. Pennell's challenge on the subject of tones or values. I will not assert that I am acquainted with any photograph in which fault cannot be found in respect of these. Neither in photography nor in painting can we reproduce the highest lights of nature as they are in reality, and in photography especially our inability to prevent the shadows from being too dark is an admitted grave restriction. But, in the same way as in painting, a compromise being accepted, it is often the fault of the artist himself, rather than of the method, if relative values are not as well expressed as they might be. I would ask Mr. Pennell and others who know the powers given to us by photography to concede the possibilities of success, and to assist us by their counsel rather than to depress our efforts by hasty and wholesale depreciation. If he asks me what grounds I have for such hopes, I will answer that I ground them on the fact that men of undoubted artistic perception now endeavour to reduce the mechanism of photography to its simplest expression, to treat its mechanical triumphs as of scientific interest only, and to make individuality and character the chief aim to be attained. They know well the disabilities, and they look forward to a greater perfection of the method. The most important question at issue is whether the faults are inherent to the system, or whether they are due to the worker—artist, if I may be allowed to call him so. If to the former the case would be hopeless, but if to the latter there is more than ground for hope, there is certainty of success; and although we may have an uphill battle to fight, although we cannot anticipate that we shall succeed in silencing all opposition at once, yet it is our duty to make ourselves heard, to press our claims, to break down prejudice, to enlighten ignorance, and to trust with confidence that the work we produce will eventually more fully succeed in establishing the claim which I have endeavoured, however incompetently, to advocate."

The paper was loudly applauded, it being evident that the members of the Club were delighted to see that somebody was taking up the cudgels in defence of photography which had been so severely attacked by Mr. Pennell.

Mr. Humphrey read a paper by Mr. A. Burchett on the same subject. The paper was short, but the writer pointed out that if Mr. Pennell's contention that photography was not a fine art were true all photographs ought to be alike, but they were not, for every one who looked at photographs with knowledge would see individuality in the work of the various men. It was absurd to compare photography with painting, in which the painter painted and left out just what he chose. Photography should stand independently as a fine art, having the two qualifications that it showed individuality, and was under the control of the mind. The artistic photographer must fully understand the capabilities of his lens, and use it more for expressing his idea of nature.

The Rev. F. C. Lambert, who had come fully prepared with notes, took up the parable, and said that Mr. Pennell's remarks might be divided into two parts: the dogmatic and the prophetic. On the latter point he would say nothing, as a man was not of much account as a prophet in his own club. A painter could alter the place of or omit a mountain, or change the direction of a river bank, but he (the speaker) would call that creation and destruction, and not selection. The photographer, though he could select his point of view, could not perform those giant feats. That painters carried their power to excess was



matter of ancient history, and he had seen landscapes which if placed beside photographs of the same spot would have awakened new feelings in the painter. Modern painters would find in photography as much power of selection as was good for them, by a proper choice of lenses and proper after-treatment of the plate and prints, but he must be content to put up with nature as she is and not as he thinks she ought to be. He quite differed from Mr. Pennell's six camera proposition for one photographer would be able to get six quite different negatives without moving his tripod legs; in fact, the difficulty was to get two negatives alike. If the photographer received different impressions of a view, and asserted that his productions recorded that impression, was he to be condemned by those whose impressions differed from his own, who were not likely in the course of nature to see with his eyes? It seemed to him a case of "orthodoxy is my doxy, and heterodoxy is any other fellow's doxy." This view seemed to be generally acceptable to the members of the Club.

Mr. F. E. Barber rather took Mr. Pennell's view, being neither a successful artist nor a successful photographer, and felt that the camera was a weapon which photographic artists—and he admitted that there were such men—fought against rather than with.

Mr. Andrew Pringle said on reading Mr. Pennell's paper he found it contained statements which it was not easy to believe came from a practical photographer. He himself had always held that photography could not aspire to be highest art because it could not give idealism, but yet there must be some quality of art in photography. As to the six cameras, he would remind them of a picture which he would call "The Somnolent Valley," which was admitted to be an artistic photograph, and though other photographers had gone to the same spot they had not secured such a picture as did "Mr. Wind." There was also a photograph by Mr. Sutcliffe of the hinder end of some boys who were looking over a wall; that was considered to be a picture, though it would not be a promising subject for many of them. There was something which caused one picture to have a certain amount of artistic effect and another to want it, and that something must be art. He believed that photography would never be capable of rivaling art, and he hoped it would be so. Photography was an art, but it was not a rival of sculpture or painting.

Major Nott agreed thoroughly with Mr. Pringle as to the position of photography; it was an art in itself, and quite distinct from any other. It was a new art. He did not agree that it should be used as by Mr. Maskell and others, for by that process its beauty was destroyed. He would draw a parallel. History was literature and so was fiction. Painting was, so to speak, the fiction of art, and photography the history. Photography was an art, and when it had reached absolute perfection it would be an art with which no painter ever could or ever would compete.

Mr. Davison read a paper for Mr. Hinton, who said it was a fact that painters whose position was assured did use photographs. It was unfair to compare painting with photography—one was centuries old while the other was in its infancy. The real question was whether past photography had not sufficient in it to justify the conclusion that with increased knowledge of its capabilities it would give the intelligent worker such results as would leave no doubt of its artistic merits in the mind of competent judges.

The Rev. — Whatton said it seemed to him that photography had been trying to show that it was intended to do the same thing as painting, though not so well. He did not think it should do that. Photography, in his mind, held a position, in relation to painting, which was similar to the relative positions of violin and organ. Neither instrument would do the same work as the other, and yet both were perfect in their own spheres; the violin was the mother of melody, and the organ of harmony.

Mr. G. Davison said they might admit that there was in most photographs an absence of poetry, and want of sentiment possibly, but there still remained in connection with the best photographs the fact that there was a naturalness about them which in the long run would have some effect on the mind of the public. Mr. Davison also joined issue with Mr. Pennell on the question of photographic perspective, which he held was absolutely correct, while that of the artist was falsified.

Dr. Patterson thought it unfair to compare the work of amateur photographers who only gave their spare time to it, with that of professional painters who devoted their whole life to

their work. In his view photographic perspective had been greatly blurred in the artistic mind by the way hand-cameras were used by the best artists of the day.

The Rev. F. C. Lambert pointed out that photography was practically limited to the possible, while artists were practically not limited. They made a great mistake in trying to measure one art by the canons of another.

Mr. Pennell made a long and rambling reply, in the course of which he had to be constantly corrected as to the remarks of previous speakers, having apparently made no notes whatever. He said that in the six-camera proposition he spoke of them being placed before a flat object such as a painting, and he still held that the six photographs would be the same; whereas six artists would give six different views of it. Mr. Maskell admitted that to a certain extent photography was mechanical, but claimed that photographers could control nature. He had never heard of anyone doing that except Moses. If photographers could do it, artists would be content to give up painting and go in for photography. He was asked whether photography could ever be admitted among the fine arts; he had no more idea than Mr. Maskell what it would become, but at present he did not see how it could. The most important thing now in art was the rendering of tones, and he thought painters could do it more truly than any machine. An artist instinctively selected his point of view and arrangement, and the man who could give them the greatest amount of genius, ability, and truth was a great man. Photographers said they were impressionists and gave their impressions; he did not see how they did so. They focussed the picture, but the impression produced was that of the film or plate, and not their own at all. The impression was a mechanical one, and that was the great point of the whole thing. Art was not representing nature as she was; art was adjusting nature, and the man who could leave out in the best manner was the greatest artist; they did not bother about topographical details. If a photographer put a figure in the foreground with his hand two inches in front of him, the hand would be twice the size it should be (No, no); all artists had tried it and found it so. He could not explain why it was, but if they tried to change a photograph into a drawing it was all wrong. If an artist were drawing a cathedral he would erect his perspective from one point, and then move a little one side or the other, and put in other points to give a comprehensive idea of the building. If they could only convince artists that photographic perspective was right, they would be only too glad to use it.

Mr. Maskell found it hardly necessary to make a reply to Mr. Pennell's comments on his paper, but he very justly pointed out that it was a pity Mr. Pennell had not taken the trouble to consider the arguments put forward in the paper, a copy of which he had some days before the meeting. Mr. Pennell's arguments were, to his mind, scarcely worth replying to; if it were worth that gentleman's time to contend the question at all, it was surely worth his while to contend it in a more careful manner. As it was so late, he would not take up their time further on the matter, though he had very much to say.

The Chairman, as a scientific man, thought both sides were wrong, and that Major Nott had very fairly represented the claims of photography. Mr. Pennell's original paper seemed to him an admission that artists were not able to draw correctly what they saw before them. The case of the cathedral was one in point; and after examining a great deal of artistic perspective he could say it was false, whereas photographic perspective was mathematically correct. He was quite sure the six cameras would not give six similar negatives, and if the six artists gave six different copies, five out of the six must be wrong. With regard to artists putting into the picture what was not in the view, photography could do that also. There was a picture by Mr. Robinson in the library showing a room with an old lady and an old man in it, and yet those two people never saw each other in their lives. Certainly that was a work of art. It was true that the photographer had no control during the exposure, but when he took the plate into the dark-room a man of education was so able to manipulate it as to get the best results. A photographer was compelled to sacrifice something, but so must an artist. Mr. Pennell had received a good pounding, but he had given back as good as he got, and neither side seemed depressed. He hoped Mr. Pennell would again favour them with his company and his esteemed comments on photography. He would them to pass a hearty vote of thanks to Mr. Pennell and those gentlemen who had contributed papers.



## Reviews.

*Photography Annual*, 1891. Edited by Henry Sturmer. London: Liffé and Co., 3, St. Bride Street, E.C. 2s.

This book has in it little that is original, much that is true, and much more that is not new. Its proportions are gigantic, and the editor can claim to having exhausted the contents of all the catalogues of makers and dealers in photographic apparatus and materials, and further to have produced a book which may help editors of the photographic press, but one which we venture to think will not be popular with our constituency, the amateur photographers.

The illustrations are for the most part fair specimens of commercial photo-mechanical processes, but have no claim to illustrate photography as an art, and exemplify no new features whatever, nor have they any connection with the text.

Section I., "Useful Tables of Reference for Practical Photographers," contains practically nothing but what has been published over and over again.

Section II., "Tips for Tyros, being useful hints on Photographic Procedure for the use of Beginners," is a colourable imitation of the "Amateur Photographer's Annual," but devoid of any order of procedure whatever.

Section III., "The Annals of Photography, being a record of Progress during the year 1890," divided into parts. The author of the first part, Mr. C. H. Bothamley, F.I.C., F.C.S., is a gentleman capable of doing justice to "Photographic Chemistry," but of course he is quite unable to do so within the limits of some forty pages. The value of the "record" is greatly discounted by the fact that in scores of instances only a reference is given to one or other of the photographic journals published in this country, or to those published on the Continent. To get the full value of Mr. Bothamley's record, it is therefore necessary to have access to the files of no less than forty-six photographic publications. In the next part Mr. Albert Taylor, F.R.A.S., writes upon "Astronomical Photography," and fills twenty pages with matter of interest only to astronomers, of whom we take it there will be few among the readers of "Photography Annual." Other articles in the "Record" are contributed by Captain Abney, Messrs. G. M. Whipple, Andrew Pringle, H. Chapman Jones, T. Bolas, and Rev. F. C. Lambert.

Section IV. is devoted to "Selected Articles on Practical Subjects by Practical Men," in which there is "much that is true, and but little that is new." These sections occupy in all some 200 odd pages.

The rest of this huge book of 820 pages is mere compilation of but little practical use, except as a catalogue of photographic apparatus and material.

The work of compilation and indexing is admirably done, and the book must have entailed an enormous amount of work upon the editor and his colleagues, but we cannot help expressing our opinion that in introducing so largely the catalogue element a great mistake has been made.

*Elementary Systematic Chemistry.* By William Ramsay, Ph.D., F.R.S. London: Messrs. J. and A. Churchill, 11, New Burlington Street.

This book is written for the use of schools and colleges. It is made exceedingly interesting by the method of grouping and classification, so as to render the apparently disconnected facts less perplexing to the student. The first part deals with Chemical Physics—Energy—Heat—Solids—Liquids—and Electricity. Part II., Inorganic Chemistry—The Elements—Compounds—Typical Compounds—The Halides—The Oxides and Sulphides, etc. Part III., Chemistry of the Carbon Compounds—Paraffins—Alcohols—Acids—The Olefines—Benzene and its Homologues, etc.

The chapters are divided into lessons. Many will find the book of great value. A knowledge of chemistry is very helpful in photography, and many might, with advantage, study this book by Dr. Ramsay, who is an admirable teacher, and has given to the student a well compiled and arranged hand-book on elementary chemistry.

**Croydon Camera Club.**—The Secretary of the club, Mr. G. R. White, has kindly supplied us with a list of excursions so far as they have been arranged:—June 6th, Merstham to Godstone; June 13th, Leatherhead; June 20th, Kingston to Hampton; June 27th, Betchworth to Dorking; July 4th, Oxted to Godstone.

## Exhibitions.

### EGYPT IN LONDON.

(By "LOITERER.")

THERE are fifty-six extremely interesting pictures by A. N. Roussoff now being exhibited by the Fine Art Society. A striking contrast is presented in "Past and Present" (10), where some natives are contemplating the tombs of the caliphs. "The Sphinx" (14) is finely painted, and "Water Carriers in the Desert" (18) gives a vivid view of the sandy desert. The characteristic effect of "Sunset after a Strong Hamzin" (19) will be appreciated by travellers up the Nile. M. Roussoff has adroitly painted "Sunlight and Shadow" (23), while its neighbour, "Hastening Home," is striking. The busy life of the bazaar, with saleswomen as importunate if not as elegant as those who preside at English imitations of this Egyptian scene, is capitably painted (25). The most ambitious picture in the exhibition is "The Citadel, Cairo" (26), which deserves great praise for its fidelity and skill. The atmospheric effect shown in "The Pyramids of Cheops and Chephren" (45) is very truthful. Even Scrooge could not refrain from smiling at the good-tempered face in "Welcome" (47). In the sketch entitled "Late Evening on the Nile" (55), one recognises the peculiar yellow tint of Egyptian scenery. The "Fruit Shop, Cairo" (56), is a delightful finale to an interesting series of pictures, upon which M. Roussoff deserves congratulations.

### EXHIBITION AT SUTTON.

The interior of the Public Hall, Sutton, presented a very pleasing picture on Tuesday last, on the occasion of the opening by H.R.H. the Duchess of Albany, of the bazaar in aid of the Christ Church building fund. The stalls were draped with striped materials to represent tents, and the stallholders were attired in dresses of the time of the Field of the Cloth of Gold, which the arrangement of the hall was intended to represent. Many of the dresses were extremely artistic, and the general arrangement of colours was harmonious and delightful. Having formally declared the bazaar open, Her Royal Highness descended from the platform and made a tour round the stalls, making numerous purchases, including a professional view of the church, and a view of the Cornish coast by the vicar, the Rev. J. B. C. Gale.

In connection with the bazaar was a photographic competition open to all comers, the judges being Messrs. A. R. Dresser, Chivers, E. Frampton, and Captain Scott. The entries were fairly numerous, and the awards well deserved. The gold medal went to a professional, Mr. Gibson, of Hexham, for a landscape with figure, "When the Day Burns Low," which was a charming sepia platinotype. Mr. J. E. Austin took the silver medal for a snow scene, "Winter." The bronze medal was secured by Mr. Murchison, Sutton, for a fine platinotype view of the interior of the Archbishop's Chapel, Lambeth Palace. Certificates were awarded to Mr. C. James, of Louth, for "You Dunce!" one of the dog series which he sent to the Crystal Palace Exhibition; to Mr. J. E. Austin, for "Chaff," also a Palace picture; and to Mr. Gibson, for a view, "On the Tyne."

Among the other pictures deserving of notice were four quarter-plate platinotype views by A. W. Bawtree; a platinotype print of "The Hall, Worden Grange," by H. W. Reeves, of Willesden; another of "The Reredos of Salisbury Cathedral," by W. H. Bois; "Friar's Cray, Derwentwater," by A. W. Bawtree; "Cottages at Harrow," and "The Garden, Hull Place, Tonbridge," by H. W. Reeves.

**Received.**—Messrs. Taylor, Taylor, and Hobson's new catalogue. A full description of the goods manufactured and sold by this firm was given in a recent issue of the AMATEUR PHOTOGRAPHER.

**Developing Trays.**—Light trays are much appreciated by all workers in photography. The Xylonite Company, Homerton, E., have sent us samples of their developing trays, which are very light, very strong, beautifully made, and admirably adapted for the purpose. It has been stated that they must not be used for "methylated spirit baths." It is very rarely that developing trays would be put to such a use, but we at once subjected the "Xylonite" trays to the tests, and found that methylated spirits had no injurious effect whatever upon them. They are made in different colours, and, of course, in all sizes; we strongly recommend their use; they are practically unbreakable, and very clean.



# **"Amateur Photographer" Dark-Rooms, 1891.**

THE "DARK-ROOMS" kindly placed at our service for the use of amateur photographers are classed as follows:—

*a* Amateur      *d* Dealer or professional.  
*h* Hotel      *s* Photographic society.

Letters of Introduction, Three Penny Stamps.

<i>a, d</i> Aberdeen	<i>h</i> Dartmouth	<i>d</i> Lechlade	<i>d</i> Romford
<i>d</i> Aberystwith	<i>d</i> Deal*	<i>h</i> Ledbury	<i>d</i> Royston
<i>d</i> Addingham, Yorks*	<i>d</i> Derby	<i>a, d</i> Leeds	<i>d, h</i> Ryde, Isle of Wight
<i>d</i> Amsterdam	<i>a</i> Devizes*	<i>a, d</i> Leicester	
<i>d</i> Andover, Hants*	<i>h</i> Dingwall, N.B.	<i>d</i> Leek, Staffs	<i>a</i> St. Agnes
<i>d</i> Aylesbury, Bucks	<i>a</i> Doncaster	<i>a</i> Lenzie, N.B.	<i>d</i> St. Andrews, N.B.
	<i>a, d, h</i> Douglas, Isle of Man	<i>d</i> Leytonstone, Essex	<i>h</i> St. Asaph
<i>d</i> Banff, N.B.	<i>d</i> Dover	<i>d</i> Lincoln	<i>d</i> St. Bees
<i>d</i> Barmouth, N. Wales	<i>d</i> Dresden, Germany	<i>d, s</i> Liverpool	<i>a</i> St. Helens*
<i>a</i> Barnsley*	<i>d, h</i> Dublin	<i>h</i> Lizard, Mullion	<i>a</i> St. Heliers
<i>d</i> Barnstaple	<i>h</i> Dunblane, N.B.	<i>d</i> Llandudno*	<i>d</i> St. Ives, Hunts*
<i>d, s</i> Bath	<i>d, s</i> Dundee	<i>d</i> Llanidloes*	<i>d</i> St. Leonards*
<i>h</i> Beaconsfield	<i>a</i> Dungarvan, co. Waterford	<i>d</i> London, Aldersgate, E.C.	<i>h</i> St. Neots
<i>a</i> Bedford	<i>a</i> Duns*	<i>d</i> Borough, S.E.*	<i>d</i> Sandgate, near Folkestone
<i>d, s</i> Belfast	<i>d</i> Durham*	<i>d</i> Charterhouse Sq., E.C.	<i>d</i> Sandown, Isle of Wight
<i>d</i> Belper		<i>a</i> Chelsea, S.W.	<i>h</i> Seddlescomb, near Battle
<i>d</i> Bexhill-on-Sea*	<i>d</i> East Molesey, Surrey	<i>d</i> Fenchurch Street, E.C.*	<i>a, d</i> Shaftesbury
<i>d</i> Birchington-on-Sea*	<i>h</i> Ebbw Vale	<i>d</i> Fleet Street, E.C.*	<i>d</i> Shanklin, Isle of Wight
<i>a, d, s</i> Birmingham	<i>d</i> Edinburgh	<i>d</i> Gracechurch Street, E.C.	<i>d, s</i> Sheffield
<i>h</i> Blackburn, Lancs*	<i>s</i> Egremont	<i>d</i> High Holborn	<i>h</i> Shepton Mallet
<i>h</i> Blakney, nr. Severn Bridge	<i>h</i> Ennistymon, co. Clare	<i>d</i> London Bridge, S.E.*	<i>d</i> Shrewsbury
<i>h</i> Bodiam	<i>a</i> Enfield Town*	<i>d</i> New Cross, S.E.*	<i>h</i> Sleaford
<i>h</i> Bodmin	<i>d</i> Eton	<i>d</i> Peckham, S.E.	<i>d, h</i> Southampton
<i>d</i> Bolton*	<i>a, d</i> Evesham	<i>d</i> Walworth Road, S.E.*	<i>h</i> Southend-on-Sea
<i>h</i> Bonar Bridge	<i>d</i> Exeter	<i>a</i> Long Eaton	<i>a</i> Southport
<i>h</i> Boro' Bridge, Yorks		<i>h</i> Long Melford	<i>a, s</i> Southsea
<i>d</i> Bournemouth	<i>s</i> Falkirk	<i>d</i> Loughborough*	<i>a</i> Stamford
<i>d</i> Bournemouth, West	<i>d</i> Falmouth*	<i>a, d</i> Louth	<i>a</i> Steyning
<i>d</i> Bradford	<i>d</i> Edinburg	<i>a</i> Ludlow	<i>d</i> Stockton-on-Tees
<i>d</i> Bramley, near Leeds	<i>s</i> Egremont	<i>d, h</i> Lynmouth*	<i>a</i> Stoke-on-Trent
<i>d, h</i> Brechin, N.B.*	<i>h</i> Ennistymon, co. Clare	<i>d</i> Lynn*	<i>a</i> Stony Stratford*
<i>h</i> Bridge, near Canterbury	<i>a</i> Enfield Town*	<i>a</i> Lythe, Whitby	<i>a, d</i> Stourbridge
<i>d</i> Bridlington Quay	<i>d</i> Eton		<i>d, h</i> Stratford-on-Avon
<i>h</i> Brigg, Yorks	<i>a, d</i> Evesham	<i>h</i> Macroom, N.B., co. Cork	<i>d</i> Stroud
<i>d</i> Brighton, Hove	<i>d</i> Exeter	<i>a</i> Madeley, Salop	<i>h</i> Sudbury, Suffolk
<i>d, h</i> Brighton		<i>d</i> Maidenhead	<i>d</i> Sunderland
<i>d</i> Bristol	<i>s</i> Falkirk	<i>a</i> Mainz, Germany*	<i>h</i> Sutton Bridge
<i>h</i> Broadway, Worcester	<i>d</i> Falmouth*	<i>d</i> Manchester*	<i>h</i> Sutton
<i>d</i> Bromley, Kent	<i>d</i> Faversham	<i>d</i> Mansfield*	<i>d</i> Swindon
<i>h</i> Brough, Westmoreland	<i>d</i> Felixstowe*	<i>d</i> Margate	
<i>d</i> Burnley*	<i>d</i> Finchley	<i>h</i> Merthyr Tydfil	<i>d</i> Tannton
<i>s</i> Burslem	<i>h</i> Fochabers, N.B.	<i>d</i> Merton	<i>a</i> Tavistock*
	<i>d</i> Folkestone	<i>d</i> Middlesbrough	<i>a</i> Thornton Dale, nr. Pickering
<i>a</i> Cadiz, Spain*	<i>a</i> Four Ashes, nr. Stourbridge*	<i>h</i> Monmouth	<i>h</i> Thorpe
<i>h</i> Callander, N.B.	<i>a</i> Frodsham	<i>d</i> Montrose, N.B.	<i>h</i> Tintern Abbey
<i>h</i> Camborne	<i>a</i> Galashiels, N.B.	<i>a</i> Mountsorrel	<i>d</i> Todmorden
<i>d, h</i> Cambridge	<i>a</i> Genoa	<i>a</i> Mumbles, near Swansea	<i>d</i> Torquay
<i>d</i> Carnarvon*	<i>h</i> Giant's Causeway, Ireland		<i>h</i> Tring
<i>h</i> Capel-Curig, N. Wales	<i>d, s</i> Glasgow	<i>d</i> Newark, Notts	<i>d</i> Tunbridge Wells
<i>a</i> Chalfont St. Peter, Mid.	<i>d</i> Glenalmond, N.B. (nr. Perth)	<i>d</i> Newcastle-on-Tyne	<i>a</i> Tynemouth
<i>d</i> Cheltenham	<i>h</i> Glenarm, Belfast	<i>d</i> Newport, Mon.	
<i>d</i> Chepstow	<i>d</i> Gloucester	<i>a</i> Newport, Pembroke	<i>s</i> Uttoxeter
<i>d</i> Chester	<i>d</i> Gorleston	<i>a</i> Niton, Isle of Wight	
<i>a</i> Chesterfield	<i>a</i> Goring-on-Thames	<i>d</i> Norwich	<i>a</i> Ventnor*
<i>a</i> Chipping Sodbury	<i>d</i> Gravesend	<i>d</i> Nottingham	<i>a</i> Vienna*
<i>a</i> Cinderford	<i>d</i> Great Yarmouth*	<i>a</i> Northallerton*	
<i>d, h</i> Cirencester			<i>h</i> Wadebridge
<i>d</i> Clacton-on-Sea	<i>a</i> Halifax	<i>s</i> Oldham	<i>d</i> Wakefield
<i>s</i> Cleckheaton	<i>d</i> Handsworth*	<i>a, d</i> Oxford	<i>h</i> Warwick
<i>d</i> Clevedon*	<i>d</i> Hanley		<i>d</i> Waterford
<i>d</i> Clifton	<i>d</i> Harrogate	<i>h</i> Paignton*	<i>a</i> Wath-on-Dearne
<i>a</i> Clitheroe	<i>d, h</i> Hastings	<i>h</i> Paisley, N.B.	<i>a</i> Wellington, Salop
<i>d</i> Colchester	<i>s</i> Havant	<i>d</i> Penrith	<i>d, s</i> West Hartlepool
<i>h</i> Colnbrook	<i>d</i> Hereford	<i>d</i> Penzance	<i>d</i> Weston-super-Mare
<i>d</i> Colwyn Bay*	<i>d</i> Hexham	<i>d</i> Pershore	<i>h</i> Wetwang, York
<i>h</i> Congleton	<i>h</i> Holbeach	<i>a</i> Perth*	<i>d</i> Weymouth
<i>a</i> Coniston	<i>a, d</i> Hull	<i>a</i> Poole*	<i>d</i> Whitby
<i>d, s</i> Crewe*	<i>d, h</i> Ilfracombe	<i>h</i> Port Erin, Isle of Man	<i>d</i> Wimbledon
<i>d</i> Crewkerne*	<i>d, s</i> Ipswich	<i>d</i> Preston	<i>d</i> Winchester
<i>d</i> Croydon*		<i>h</i> Prince's Risboro'	<i>h</i> Wrexham
	<i>d</i> Jarrow		<i>d, h</i> Windsor and Eton
<i>a</i> Dalton-in-Furness	<i>d</i> Jersey	<i>d</i> Ramsgate	<i>d</i> Wisbech
<i>d</i> Darlington		<i>d</i> Reading	<i>a</i> Wolverhampton*
	<i>d, s</i> Keighley	<i>h</i> Redcar	<i>a</i> Worcester
	<i>s</i> Kendal	<i>h</i> Redditch	<i>d, h</i> Worthing
	<i>a</i> Kingstown, Dublin	<i>d</i> Rhayader	
	<i>a</i> Knutsford	<i>d</i> Richmond, Surrey	<i>a</i> Yarm
		<i>a</i> Ringwood, Hants	<i>d</i> Yeovil*
	<i>d, h</i> Lancaster	<i>d</i> Rochdale	<i>a, d</i> York
	<i>d</i> Larne	<i>a</i> Rodley, near Leeds	<i>d</i> Youghal
	<i>d</i> Leamington		

NOTE.—At the time of going to press we have not received signed authority for the use of "Dark-rooms" marked\*; but they were all placed at our disposal last year, and are doubtless available.—ED. AM: PHOT:



APPLICATIONS for letters of introduction must be accompanied by **three penny stamps**. Full particulars are given as to charges (if any); plates, chemicals, etc., kept in stock by dealers; terms for temporary membership of societies, etc., etc.

THE OWNER of Dark-Room will be advised by same post as the applicant. In order to prevent delay, all applications should be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., and *plainly* endorsed "Dark-Rooms."

CONTINENTAL DARK-ROOMS.—Information can be supplied respecting many Dark-Rooms on the Continent, and addresses given of firms who stock photographic materials.

## Holiday Resorts and Photographic Haunts.

### STIRLING.

THE town itself, with its narrow, steep streets (or "wynds"), afford plenty of scope, while the views of the Castle from different points, of the High Church and of the old bridge, are only too well known. A good general view, however, can be obtained from the footpath by the river north of the railway station (early morning), or from the other side from the rifle-butt on the Dumbarton Road about an hour later, showing the Castle on its high cliffs, with the beautifully wooded "Backwalk" (overtopped by the spires, etc.) leading up to it. The immediately surrounding country supplies (especially the neighbourhood of the famous Gillieshill) ever-changing scenes of rocks and woods and streams. But it is especially as a centre that Stirling is pre-eminent, as the following may show:—

Alloa (7 miles rail, 3rd return 8d.), an old town with a tower connected with the Bruce, as is also Clackmannan Tower, about 3 miles distant.

Alva (8 miles rail, 1s. 4d.), a pretty glen with three falls, at the foot of the Ochils.

Dollar (13 miles rail, carriage 2s. 6d.), another glen (wilder) with an old stronghold, Castle Campbell; permission necessary.

Bridge of Allan (3 miles, both tram and rail, 3d.) Near this are the grounds of Keir, Kippendare, and Airthrie (permission necessary for all), as well as the Wallace Monument on the Abbey Craig.

Dunblane (6 miles rail). Here there is an old cathedral with a fine triple window, and some nice river views on the Allan.

Doune, with its ruined Castle Callander, the entrance to the fairy-land of the Trossachs and the Pass of Leny, as described in the "Lady of the Lake" and "Montrose;" Aberfoyle, connected with "Rob Roy;" near it the Lake and Castle of Menteith. To the south are Campsie, another beautiful glen, and to the east Falkirk, with the great Canon Irons Work near it.

Truly a

"Land of brown heath and shaggy wood,  
Land of the mountain and the flood."

## Quarterly Examinations in Photography.

**Question 25.**—Define the terms *apochromatic*, *secondary*, and *tertiary spectrum*, and explain the two latter terms thoroughly.

ANSWER.—Apochromatic means the same as achromatic, and is the term used for lenses made from the new "Jena" glass, which, owing to the different refractive angles, or power, is capable of more perfect colour correction, and gives images almost free from secondary (or, as more correctly called, "residual") spectrum. The term is usually applied to microscopic objectives, which owing to the magnification need this point attended to more carefully.

A single lens acts as a prism, and white light passing through it is refracted, the blue rays being brought to a focus nearer to the lens than the yellow and red ones, *i.e.*, the chemical focus is shorter than the visual one. This might be overcome by placing another equal and opposite lens of the same glass in contact with the first, but then the two lenses would act as a piece of plain glass, and the light would pass out the same as it entered, and we should have no focus at all; but by using a glass of a different refractive power we can (whilst lengthening the focus) bring some of the rays to coincide with others, the remainder which do not coincide forming the residual spectrum.

For photography the rays about the line D are made to coincide with those about G, these two points being taken as the visual and actinic focus.

**Question 26.**—Explain the action of coloured glass in printing-out on silver paper?

ANSWER.—If we place the different salts of silver, in conditions similar to what they are in the paper, in the rays of a spectrum, we shall find that the first to darken is the chloride under the violet rays, and that by the time that it has darkened under the green rays (nearly twenty times as long) the other salts have also appeared; secondly, if we place these darkened salts in hypo (strong) we find that while the darkened chloride is largely dissolved, the others are only slightly affected.

It should have been noted that the violet rays do not affect the other salts of silver so rapidly as some of the rays nearer the red end of the spectrum, say between the blue and the green. Now, if we interpose a piece of glass cutting off the violet rays, we shall have the image formed of albuminate, etc., of silver, as well as of chloride.

It is possible also that, owing to the slower action of light, the chlorine is given off more regularly, and absorbed by the absorbent present, hence helping to form a stronger image. S. N.

**Question 27.**—Explain the mechanical principles involved in the construction of a tripod, and the laws to be observed to obtain the greatest steadiness, etc.

ANSWER.—There are three strains to be taken into consideration, looking upon a tripod as a table with three legs supporting the camera—

(1) Compression. This for the ordinary size of cameras is not a serious one, the weight of the camera being so little that the fibres of any wood or metal are quite equal to it.

(2) Bending. If we place a heavy weight on the top of the tripod we find that each leg will bend and form a slight arc. This is compensated by making the square section of each leg of such a size in proportion to the length as to prevent this bending. This bending will always take place if the weight is sufficiently heavy.

(3) Twisting. Owing to lateral and wind pressure there is a third strain which may be overcome by dividing the leg so as to make it with the head form a triangle. The resisting power increases with the length of the base of the triangle, *i.e.*, the length of the side of the tripod head. S. N.

### QUESTIONS.

31.—Write a brief note on the influence of development on gradation (350 words).

32.—How would you restore a yellow albumen print?

33.—Is there any difference in the resulting tint of a bromide print when the paper is exposed at 2 ft. or 6 ft. from the source of light? How would you calculate the exposures required at the latter distance, that at the former being known?

(Latest day for Answers, June 22nd.)

#### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER,  
1, CREED LANE, LONDON, E.C.

## Societies' Meetings.

**Ashton-under-Lyne.**—The monthly meeting of this Society was held on the 4th inst. Dr. A. Hamilton, President, occupied the chair, and there was a large number of members present. The Secretary then gave a report of the ramble to Strines, and Mr. W. Chadwick followed with a description of the outing to the Goyt Valley. After hearing reports, etc., a number of hand-cameras were put before the meeting, the owners explaining the various characteristics of each; amongst them were the Scott, exhibited by Dr. Hamilton; Chadwick's, Mr. W. Kenworthy; the Facile, Mr. Geo. Candlitt; Griffiths, Mr. Jenkinson; two, own made, Mr. Chadwick; and one by Mr. Secker. Considerable interest was shown, and opinions expressed as to their merits or otherwise.

**Brixton and Clapham.**—At an ordinary meeting of the Club held on the 4th inst., Dr. Reynolds, Vice-President, in the chair, Mr. W. H. Powell gave a most interesting paper on "Hand-camera Work," and this being a favourite subject with the members, was listened to



with great attention. The lecturer explained the use of several hand-cameras, amongst others Messrs. Marion's "The Radial," and Mr. Cusworth's "Repeater," which had been kindly lent by their respective makers. Mr. J. A. Butler, one of the members, also exhibited an excellent camera made by himself, which attracted considerable attention.

**Cardiff.**—Saturday's excursion (6th inst.) brought out a big contingent for Cowbridge. The journey was performed by road, and a short stay was made *en route* at the ruins of Beaufort Castle. Notwithstanding the uncertain weather, some good work was done for the survey. The party dined at the "Bear Hotel," and arrived back at Cardiff about 9 o'clock.

**Croydon Micro.**—An ordinary meeting was held on the 5th inst., Mr. J. A. Carter, M.A., in the chair. No paper being down for this evening, the results of the past excursion were shown by the members. Mr. Weir-Brown exhibited some bromide enlargements toned by uranium; he also mentioned with reference to mounting prints toned in this way, that care must be taken not to damp the face of the print when mounting, as a stain is left when the print has dried and if by chance the face of the print did get damp, he used a damp (wrung out) sponge, and then the face of the print made equally damp all over. Mr. Carter asked if it was necessary to always damp the prints. Mr. Weir-Brown said a sizing of starch at the back of the prints would prevent moisture, when mounting, from appearing on the print. Mr. Carter brought forward a proposition made by Mr. Weir-Brown some time back, that members should introduce subjects that would promote discussions.

**Holborn.**—At last Friday's meeting, Mr. E. H. Bayston in the chair, Mr. Herbert Thompson read a paper on the "Hand Camera," offering suggestions which the writer thought would be an improvement on some of the hand-cameras at present in the market, especially with regard to the finder, the lens, and the shutter. An interesting discussion followed, chiefly on the use of hand cameras, in which Messrs. Bayston, Golding, Luxton, Benest, and Raphael took part. Mr. J. Bush was elected a member of the club.

**Lewisham.**—At the meeting on the 5th inst., Mr. A. H. Miles, Vice-President, in the chair, Mr. M. Stodart gave his paper entitled "The Necessity of Care in all Photographic Operations," which, though mainly intended for beginners, proved most interesting and instructive to the more advanced workers, especially as it was practically illustrated. During the evening the prize (which consisted of two dark slides) for the developing competition, was presented to Mr. Hamerston. Next meeting, June 19th—"Chinese Artists," by Mr. Thos. Child.

**Lowestoft.**—At the meeting on the 5th, Mr. W. Springfield presiding, the Rev. A. Wells exhibited some very interesting slides, illustrating his travels in Constantinople, Florence, and elsewhere. Mr. Estcourt gave a further instalment of his stereoscopic views of Burnham Beeches, the tone and quality of which were excellent. Mr. A. M. Smith also produced some half dozen slides, evincing careful work with due appreciation of the artistic.

**North London.**—At a meeting on the 2nd inst., Mr. A. Mackie in the chair, Mr. J. Traill Taylor, President of the Association, gave his second lecture on "Stereoscopic Photography." The lecturer entered very fully into the history and construction of the various forms of the stereoscope from the earliest times, and exhibited several specimens of the instrument, both of foreign and English make, pointing out what he considered the advantages of each particular form. He described very minutely several stereoscopes which were now obsolete, one or two of which he said were so unique that he only knew of one specimen of the kind ever being made. The lecturer also brought with him a large collection of stereoscopic slides, each slide being illustrative of some principle or some defect which he wished to bring before the members. He also exhibited a new hand-camera of French make, which is being brought out, and which can be used for single views, and by a very ingenious sliding arrangement can be quickly altered so as to take stereoscopic pictures. Mr. Taylor entered very fully into the optical arrangements of the stereoscope, the mounting of the stereoscopic pictures, and the methods of taking such pictures both in a single lens camera, and also by means of two lenses. Mr. Coventon had brought with him a Latimer Clark's Stereoscopic Camera, and the construction and method of working this camera were fully explained by the lecturer. The lecture was highly appreciated by the members present, and a hearty vote of thanks was duly accorded to Mr. Taylor. Tuesday evening, June 16th, is a technical evening, when Mr. J. G. Hudson will most probably exhibit his new patent time exposure magnesium lamp.

**North Middlesex.**—On the 6th inst. a few of the members took part in the field-day to West Hampstead and district. On Monday the 8th inst., Mr. H. Walker in the chair, Mr. J. Traill Taylor addressed the Society on "Faults in the Composition of Photographs." Mr. Taylor dwelt upon the faults to which the photographer is most prone, showing numerous prints illustrating his points, and showing how by reducing the expanse of uninteresting foreground many

an unsatisfactory view might be transformed into a picture. He pointed out that repeated straight lines and geometrical arrangements were wearisome to the eye. Touching upon portraiture, the lecturer dealt with the arrangement of single figures and groups, advising his hearers not to yield to the pressure of their lady friends to make the details of the dresses the principal attraction, but to throw central interest upon the face. Three members were elected and two nominated. On Monday, the 22nd inst., Mr. F. L. Pither will read a paper on "Art in Landscape;" visitors welcome.

**Putney.**—The first monthly summer meeting for the election of new members, and discussion of subjects of interest was held on the 3rd inst., the Rev. L. Macdonald in the chair. The following were elected as members:—Messrs. Brothers, Handcock, Searle, Trenchgrouse, and Miss Parsons. Dr. Sheppard was elected to fill the vacancy on the Council caused by the unavoidable resignation of Mr. Manifold. Next excursion, Saturday, 13th inst., Burnham Beeches. Saturday, June 27th, excursion to Chislehurst.

**Richmond.**—At the meeting on the 5th inst. Mr. Cembrano presided. A demonstration of toning Celerotype paper was given by Mr. Blackie, of the Blackfriars Sensitising Company, who also showed some very fine finished prints, and distributed samples of the paper amongst the members present. The Chairman showed some beautiful transparencies of the Alcazar of Seville and the Alhambra.

**Rotherham.**—At the usual monthly meeting held on the 2nd inst., Dr. Baldwin (President) in the chair, an interesting discussion on "Dry Plate Development" took place, and from the opinions expressed it was apparent that pyrogallol acid was the most generally preferred for ordinary work. On a recent occasion five members exposed plates (all from one packet) under precisely similar conditions as to subject, aperture of lens, light, and time, and these had been developed by means of (1) pyro and ammonia, (2) pyro and carb. soda, (3) hydroquinone, (4) eikonogen, and (5) ferrous oxalate. The day selected proved most unfavourable, but the experience gained was very instructive. Mr. W. H. Smith resigned his position as Hon. Secretary, in consequence of his contemplated removal to another town. He was warmly thanked for his past efforts to further the interests of the Society, which now has a membership of thirty-four. Mr. H. C. Hemmingway, of 6, Stanley Street, Rotherham, kindly undertook to fill the office *pro tem*.

**Sheffield.**—The ordinary meeting was held on the 2nd inst., Mr. B. J. Taylor in the chair. Arrangements were made for an excursion to Lincoln for June 18th. The President gave a practical demonstration on "Toning and Fixing Gelatine Chloride Emulsion Paper." Mr. T. G. Hibbert demonstrated with the ordinary albumenised paper, which was very instructive to the large number of young members present. Mr. Hibbert brought before the meeting an interior printed on Obernetter paper, which was very much admired.

**Southport Social.**—The first exhibition of pictures in connection with the above was held on the 3rd inst. Mr. Kay, of 211, Lord St., very kindly acted as judge. The prize for instantaneous work was awarded to Miss Wall, with a neat little "Kodak" street scene in Cairo. Miss Dunmore obtained the prize for the best decorative window transparency, and also the prize for the best exhibit with a nicely selected view taken at the Botanic Gardens. There was a large number of pictures and transparencies for competition, and the members are to be complimented on their work. Mr. Cross exhibited some very effective portraits showing the great taste he has acquired for posing. Mr. Dunmore also exhibited a large carbon print of Salisbury Cathedral, which is considered to be one of the most successful ever taken of this fine specimen of architecture. Mr. Cave and Mr. Franks had on view some first-class requisites in the photographic line, including some of the latest novelties. The whole affair passed off in a very satisfactory manner. Another exhibit on a larger scale is arranged to take place in October.

**Wolverhampton.**—At the monthly meeting of this Society, held on the 2nd inst., Mr. Middleton, of the Birmingham Society, delivered a most instructive and interesting lecture on "Photo-Mechanical Printing Processes." In his opening remarks, he stated that being a large subject, and the method complicated and full of details, there would be some difficulty in making the various processes sufficiently clear to a novice in the art, and that the better way would be to give a general idea of the work, rather than a detailed description. The key to photo-mechanical processes was the action of light upon bichromate of potash, and by this means Fox Talbot patented his photogravure process in 1853, although closely followed by Woodbury, who obtained the same results in a different way. Woodbury-type, photo-litho, photogravure, Meisenbach, colotype, electrotpe, etc., were most clearly explained, and various questions arising from the different subjects were ably answered by the lecturer. The tables were well filled with specimens of plates, blocks, and finished work illustrating the whole of the processes described. These were examined with much interest by the unusually large number of members and friends present. Mr. Gibson had on view a fine collection of lenses by Taylor, Taylor, and Hobson, of Leicester; also a sample of the Blair camera.



## Apparatus.

### SHENSTONE'S FOCUSING CLOTH CLIP.

MESSRS. HOUGHTON AND SON, of 89, High Holborn, have sent us a specimen of this clip, which is intended to be placed within a hem at the edge of the focussing cloth, and so holds the front tightly to the camera. The clip is hinged so that it folds up into small space. The clip is ingenious, and the price is 3s. 6d.



### AUTOMATIC SUCKER HANDLE.

Mr. Tylar, of 57, High Street, Aston, Birmingham, has sent us another of his ingenious novelties, which is intended to take the place of the more pretentious pneumatic holders for the cutting shape. As will be seen from the cut, it consists of a wooden handle at the end of which is an indiarubber cup, which is wetted and then pressed to the centre of the cutting shape, which it holds securely. The price is only ninepence, and it will be found a boon by those who have suffered from the slipping of the glass.

## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

**4752. North Wales Tour.**—Contemplate doing North Wales end of July for fortnight, taking in Chester, Rhyl, Vales of Llangollen and Clwyd, Llandudno, Bangor, Carnarvon, Bedd Gelert, Bettws-y-Coed, Aberglaslyn, through down to Abergystwyth. Would feel obliged by any information about the best views at these places, also as to suitable hotels, as well as any other information which would be useful. Would like to hear from brother amateur, who could join me in the tour.—**GARSTON.**

**4753. Green Colour on Negatives.**—Can any reader tell me the cause of the green colour at the back of some negatives after fixing?—**H. M. D.**

**4754. Spots and Faded Prints.**—Will carbolic acid and methylated spirit in mountant spot or fade prints?—**H. M. D.**

**4755. Early Morning Photography.**—Could any fellow-reader tell me if Lancaster's quarter-plate Instantograph lens gives good results for views between 6 and 7 a.m. in London; if so, what stop and exposure is best? Also any particular plate?—**W. F.**

**4756. Bettws-y-Coed.**—I propose spending a fortnight in North Wales shortly, and should be glad to learn through the **AMATEUR PHOTOGRAPHER** any places of interest round Bettws-y-Coed, and any assistance as to light. I have one of Ross' rapid symmetrical lenses. What exposure should I give with Ilford's ordinary and Fry's Kingston Special 60 times? I shall bring home to develop. Could I have better dry plates than these?—**D. G. H.**

**4758. Printing.**—Where can I get printing from my negatives done at a moderate price? Most photographers ask a ridiculously high rate.—**H. G. S.**

**4757. Developer.**—I have hitherto used Ilford plates, and confined myself to the formula given with each box of plates. Can I do better? There

are formulae sold similar, but ready mixed; this would save much trouble if they answer as well. I suppose this formula would not suit other makes of plates so well?—**D. G. H.**

**4753. Half Plate Camera.**—I wish to buy a half-plate camera with three dark-slides and drop shutter, stand, etc. Will someone advise me? I am willing to go to the extent of £10 or £12.—**H. G. S.**

**4760. Distilled Water.**—Will someone kindly give a good substitute for distilled water? Would rain water, boiled and strained through muslin, answer? Any information on this subject I shall esteem a great favour.—**COUNTRY COUSEN.**

**4761. Hintokinone.**—Can any of your readers give me advice as to the use of hintokinone as a developer?—**C. E. F.**

**4762. Alum, Before or After Fixing.**—Could any readers of the **AMATEUR PHOTOGRAPHER** inform me if it would improve my negatives, which are developed with Lockyer's hydroquinone developer, by using a clearing solution or alum bath before or after fixing the negatives? A reply will oblige.—**W. H. ELLIS.**

**4763. Masks and Discs.**—Can any reader kindly inform me how a bust is vignetted on a cabinet size without any background? I mean head and shoulders only.—**J. O. M.**

**4764. Toning.**—Having two lots of sensitised paper by two London makers, I wish to know whether Mr. Ellis's toning bath, in the reply 4722, will answer for any papers? I should be glad to know the cause of my films coming off after developing. I always use the alum bath.—**JOHN BOUGHREY.**

**4765. Rochester and Chatham.**—I shall be spending a few days in this neighbourhood shortly, and shall be obliged to anyone who will be good enough to mention places of photographic interest.—**ANON.**

**4766. Blacking Slides.**—I want to re-blacken my metal dark-slides, as the japan black scales off. Will anyone, therefore, please give me a formula for chemically blacking tin plate and sheet iron? Nitrate of copper, as used for brasswork, will not do.—**A. D. F.**

**4767. Orthochromatic Colour Screens.**—Will any reader please tell me where I can obtain a small quantity of aurantia, or give me the name of some orange or yellow dye, easily obtainable, and equally suitable for staining collodion colour screens for orthochromatic work? The dye must be soluble in alcohol and ether.—**A. D. F.**

**4768. Eikonogen Formula.**—Wanted, an eikonogen formula for Ilford alpha and bromide papers.—**A. D. F.**

**4769. Reproduction.**—Is there any easy and cheap process by which I can reproduce photographs (either reduced or enlarged) so as to print or copy them on ordinary paper, after the style of photo-zinc half-tone blocks? If there is, can any reader oblige me with the process?—**SELRAHC.**

**4770. Enlarging.**—I have a capital quarter-plate French camera with R.R. lens. Can I make daylight enlargements with this on bromide paper? If so, will some brother amateur kindly tell me how to go about it?—**SELRAHC.**

**4771. Lantern Slides.**—I have lately made some very fair slides on Thomas's lantern plates, but find, after fixing, a faint green film on the back of plate (except the transparent portions, such as sky, etc., which are perfectly clear). Can someone kindly tell me how to avoid this in future, and whether I can remove it from plates already made?—**SELRAHC.**

**4772. Blisters.**—Can any reader tell me how to prevent my prints from blistering? I use the borax bath for toning, and make the hypo slightly alkaline with ammonium hydrate, both baths being of the usual strength. The blisters appear as soon as

**Wood's Washer.**—Mr. James Wood writes us that he has disposed of his rights in his washer, which has deservedly gained such success, to Wood's Washer Company, 25, Cumberland Street, Liverpool. We understand that the sales have increased 100 per cent. this season.

**Dark-Room for Amateur Photographers in London.**—Messrs. Parker and Co., of 288, High Holborn, have fitted up a large dark-room for the sole use of amateurs, which has no connection with their business; a very moderate charge is made for the use of it, and many will, we feel sure, find a dark-room in such a central position very useful.

**Swinden and Earp's Camera.**—We have just heard from Messrs. Swinden and Earp, 21, Islington, Liverpool, that they have arranged to supply sheaths for their cameras, and that the operator can, at will, either put his plates in sheaths or use them backed. The charge for a set of sheaths is 2s. 6d.

**Correction.**—Mr. W. H. Ellis writes:—"I should be much obliged if you could correct the error in last week's **AMATEUR PHOTOGRAPHER** (5th June, 1891), in my answer to Query No. 4722, Toning Bath, p. 416, middle column. The end of the answer should read, 'N.B. Untoned prints fade,' instead of 'Re Untoned Prints Fad,' as it appears."

I commence to wash the prints after fixing. I use tap water, which contains the carbonates of calcium and magnesium.—**SCRIBO.**

**4773. Instantaneous Work.**—I wish to take views of ships with the Instantograph half-plate, using its shutter, but am in doubt as to the best plate to use. I should be glad if some reader would kindly give me some help. I use the Ilford plates for ordinary work.—**SCRIBO.**

**4774. Exposure.**—Is there any reliable table of exposures extant which will help a beginner? I have Burton's, Wheeler's, and Vie's, but each one is different. For example—Vie tells me that, using f/32 stop, 30 times plate, diffused light, for open landscape with strong foreground, as trees, or light buildings, I must, in April or August, at 3 p.m., give an exposure of 2½ secs. Wheeler says 1½ ms that under precisely the same circumstances and conditions I must give 6 secs. Burton says 4 secs. Which is correct? Advice will be gratefully welcomed by—**A PUZZLED NOVICE.**

## QUERIES UNANSWERED.

May 29.—Nos. 4711, 4723.

June 6.—Nos. 4727, 4729, 4732, 4733, 4737, 4738, 4740, 4746, 4749, 4750, 4751.

## ANSWERS.

**4709. Central Africa.**—I believe Carbutt's films keep well in hot climates, and as fluid developers and also chemicals, might deteriorate in so hot a climate, I should say pellet developers in bottles would be the best. Cyanotype paper would be most convenient, but it does not keep, so perhaps Pizzighelli platinum paper would suit, only needing a wash in dilute hydrochloric acid.—**PONTO.**

**4709. Central Africa.**—(1) Depends upon whether you have a roll-holder or not; if you have, then Eastman's is if you can get it; if not, Carbutt's. Eastman's sell the Kodaks, but are unable to supply a roll of the collodion film. (2) I should think Powell's developers would be the most convenient form and one of the fixed alkalis in the dry state; for instance, the dried or exsiccated carbonate of soda. (3) This will be the greatest trouble. Ordinary albumen paper in sealed tin tubes.—**E. UNUM.**

**4712. Retouching.**—Pencil will not take on the film. The usual way is to put one or two drops of the medium on the negative, and distribute with the forefinger tip, rubbing in circles till nearly dry.—**OSIRIS.**

**4715. Optical Contact.**—Take 1 oz. of gelatine and soak in cold water until soft, and add 10 oz. of boiling water. When quite dissolved, place a glass or porcelain dish in a vessel of hot water, about 100 deg. Fahr. in temperature, and filter the solution into this through a piece of muslin. Then, having previously cleaned your glass plates, immerse a print in the gelatine and leave till soaked, place it upon the glass plate, and squeeze. When dry, trim the edges with a knife. It is best to vignette a border of about ¼ in. all round. The glass plates, bevelled, with backs, may be purchased at about 2s. doz., ¼ plate size.—**PONTO.**

**4716. Reducing.**—This question can be fully answered from almost any handbook. This reduction from half plate to 3¼ is one half, therefore the distances are 2½ in. between lens and negative, and 12½ in. between lens and lantern plate.—**OSIRIS.**

**4716. Reducing.**—If you wish to include the whole of your half-plate negative on the slide and show a rectangular picture, the distance from the negative to the optical centre (roughly, the diaphragm) of the 8½ in. lens will be 25½ in., and from



the lens to the lantern plate  $12\frac{1}{2}$  in. If you want a square picture, and to include as much as possible of the negative, then the distances will be  $20\frac{1}{2}$  and  $14\frac{1}{2}$  respectively.—THE SMITH.

4717. **Switzerland.**—The following may perhaps help "I. I. S." The latitude of London is approximately 52 deg., that of Brunnen 47 deg.; the unit which expresses the chemical action of light for 50 degs. is 432 for June and 408 for July. The unit for 40 degs. for June is 469, for July 452. As there is only 5 deg. difference between Brunnen and London, the difference in exposure will not be great in this respect, but as the elevation above sea level has considerable influence on the amount of chemical rays absorbed by the air, this should also be taken into account. The difference between the chemical intensity of light at 53 deg. and 49 deg. (327 units for the former and 373 for the latter) is 46; we may therefore conclude that, taking the purer and clearer air of Brunnen into consideration, and its probable greater elevation, one quarter or one third less exposure would be sufficient. One or two trials, however, would very soon establish, and one should also take into consideration the character of the view. One or two trials with Wormald's table as units would give more information, however, than all theory.—OSIRIS.

4718. **Wide-Angle Lens.**—"Phim." A Ross portable symmetrical No. 4, about 6 in. focus, covers a  $7\frac{1}{2}$  by 5 perfectly and with marvellous definition. At very close quarters I have used it successfully with a 12 by 10 plate.—GREENWOOD.

4721. **Instantograph Lens.**—You have not pulled the bellows forward towards lens, as you must do when using rising front. Your plate is not covered because a fold of bellows has cut off a portion of the light. My lens is a Rectigraph, but I had the same difficulty till I found out the above.—F. P.

4726. **Exposure.**—Conditions are too vague. It depends upon weather, time of year and day, plate, and aperture, which "medium stop" does not describe very well. Get an exposure table; there is a good one on Thomas's plate boxes.—PONTRO.

4726. **Exposure.**—The exposure with the lens named would be exactly the same with every other lens working at the same aperture, and this would be dependent on the light, rapidity of plate, distance of group, etc.—OSIRIS.

4728. **Wide-Angle Lens.**—The Optimus W. A. Euryscope of 6 in. focus would include an angle of about 80 degs. on a  $7\frac{1}{2}$  by 5 plate, which would be wide enough and to spare if artistic results are considered. I would not recommend a shorter focus.—THE SMITH.

4728. **Wide-Angle Lens.**—Either Perken and Raymond's W. A. Euryscope or their portable symmetrical 7 by 5 would suit "Phim." The Euryscope is quicker than the other, working at  $f/9.50$ . They both give quite a wide enough angle for anything. The prices are: Euryscope, £2 14s. 6d.; W. A. symmetrical, £2 12s. 6d.—PHENIX.

4730. **Mounts.**—Edwin Osborne, 26, Red Lion Square, London, W.C., will supply what you require.—PEN.

4730. **Mounts.**—"H. I. O." had better get Fallowfield's "Annual," and there he will see all kinds of mounts, all sizes, colours, and prices. The address is Charing Cross Road, W.C.—P. R. S.

4731. **Retouching.**—Coat the back of the negative with a very pale yellow tinted varnish, and when dry, remove it with a knife from the parts that are too dense. Print in diffused light.—THE SMITH.

4733. **Intensifying.**—Your chemists must be odd people. I can get bichloride of mercury anywhere by stating that the purpose is photography and signing poisons book. I use it often and I am still alive. Keep it locked up, don't dabble your fingers in it, wash your dishes and the plates well, and you will not run the smallest risk.—F. P.

4733. **Intensifying.**—The solution you mention is quite safe unless you pour it down your throat or get it into sore places on your hands. Write to your photographic dealer for the mercury; if every one else fails, Reynolds and Branson, 14, Commercial Street, Leeds, will send an ounce without questions if you write to them. You can raise the plate out of the solution by putting a piece of string underneath.—PEN.

4733. **Intensifying.**—You are quite right about the dangerous qualities of bichloride of mercury, and as it is included in the list under the "Poisons Act," a chemist will not sell it unless you have a witness to sign in a book kept for the purpose. If you do not wish to have the chemical about you, you will simply have to take more care in development, as there is nothing else less poisonous to take its place.—THE SMITH.

4733. **Intensifying.**—Doubtless bichloride of mercury is a dangerous inward poison, but it is safe enough if made in solution and kept in a stoppered bottle. Of course, a strong solution will do harm outwardly. Make a solution as follows:

Mercuric bichloride ... ..  $\frac{1}{2}$  oz.  
Water ... .. 5 "  
and be careful.—J. C. M.

4733. **Intensifying.**—It is a poisonous solution, certainly, but not so terrible as you make out unless you are very careless. I have intensified numerous negatives with it, and am yet alive to tell the tale. I am not a great admirer of this intensifier, and as

you don't seem to want to use mercury you had better invest in a bottle of the Platinotype Company's Perfect intensifier, which works well, provided that you keep the dish rocking all the time. I should think it was practically quite harmless in ordinary use.—R. A. R. BENNETT.

4733. **Intensifying.**—My chemist always allows me to have the solution you name, but I always sign my name in a book, stating for what purpose it is intended, and I have no trouble. If I were you I would try this: Uranium nitrate, 10 gr.; water, 1 oz. Place your negative into this for about three minutes (of course the negative must be thoroughly washed beforehand). After draining the plate, but without washing, immerse in a solution of potassium ferricyanide of the same strength. It will soon change colour; it should be lifted out once or twice so that the change may be seen and not allowed to go too far. A thorough washing must follow.—P. R. S.

4733. **Intensifying.**—Most of the ordinary intensifying formulae contain mercury, either iodide or chloride. No doubt the latter is very poisonous, but that a drop of 10 per cent. solution would prove fatal is gross exaggeration. The smallest fatal dose is usually given as three grains of the solid salt, which would represent about half a drachm or more of the solution given by W. H. B. But one does not usually drink or taste one's photographic chemicals. Many others—such as pyro—are also poisonous, so that care must be used with all such, especially not keeping solutions near anything that is used to drink. There are various formulae for intensifying with silver nitrate—also a poison, by the way—but they are very difficult to use without staining the negative. As to trouble about obtaining mercuric chloride, photographic dealers are not usually so particular as the chemist mentioned in the question.—GREENWOOD.

4733. **Intensifying.**—I do not see how one drop of bichloride of mercury solution could be so deadly as to prevent Mr. Ellis from using it. Surely thousands have used this method of intensification and have still been alive the next day. Get your chemicals from a photographic dealer and you will have no bother. Mr. J. B. B. Wellington recommends the following formula:

I.  
Silver nitrate ... ..  $1\frac{1}{2}$  oz.  
Water ... .. 18 "

II.  
Ammonium sulphocyanide ... .. 3 oz.  
Sodium hyposulphite ... .. 3 "  
Water ... .. 18 "

Take equal parts of each, adding II. to I. until the precipitate is just dissolved. To each ounce of this add 3 minims of sulpho-pyrogallol and 6 minims of ammonia. Afterwards place negative in hypo and wash. Full details of this formula may be found on page 70 of "Amateur Photographers' Annual," a book which every photographer ought to possess.—PHENIX.

4734. **Films, Exposure for in Norway.**—Films are much more convenient than plates, as very little luggage can be carried in Norway. Fry's "60 times" are excellent and not so fast as the title suggests. Get them fresh from the maker. Subjects vary so much that it is difficult to give an "average" exposure, but the light is more actinic than in England. "Instow" should be prepared for much trouble in changing, and take as many slides as possible, also plenty of red paper.—K. GRIFFITH.

4739. **Gold Chloride.**—Dissolve in 15 dr. of distilled water and you have a solution of 1 gr. to 1 dr. which will keep indefinitely.—THE SMITH.

4739. **Gold Chloride.**—Dissolve 15 gr. in 15 dr. of water; you have then 1 gr. in each drachm of water. This in the dark will keep for months.—GREENWOOD.

4739. **Gold Chloride.**—I usually dissolve a tube of 15 gr. chloride of gold in 15 dr. of distilled water; put it into a blue bottle so that the light shall not get to it, and label it 1 gr. of gold to each drachm. I believe in this state; it will keep a year or even more.—H. I. C.

4739. **Gold Chloride.**—Your best plan to dissolve your tube of gold is to do it in 15 dr. of water, and then when you want a grain of gold you can take a drachm of water. This is what I always do. I have some now that I made nine months ago, and it is as good as ever. It must be kept in the dark.—P. R. S.

4739. **Gold Chloride.**—Dissolve your tube of gold in 15 dr. water. You will then have a solution of gold chloride 1 gr. in 1 dr. If the water is pure (filtered rain or distilled preferable), and you keep out the label on tube, broken glass, etc., i.e., filter, and do not expose to a strong light, the solution will keep for months.—PEN.

4739. **Gold Chloride.**—A very vague query, since it depends entirely on what you wish the strength of the resulting solution to be! Either dissolve the contents of the tube in 15 dr. of water or 15 oz. of water, according to whether you want a grain of chloride to a drachm or an ounce of water. It will keep any time if you make the bottle opaque by covering it with brown paper or painting it with black paint, for which I use a rather stiff mixture of lamp black and gold size.—R. A. R. BENNETT.

4741. **Matt-Surface Paper.**—Get Scholz's matt-surface paper print very deep, wash in only one

water, and for as short a time as possible. Use an old borax bath and do not add fresh gold if it has been lately revived. If you make up a fresh bath, let it be weak in gold— $\frac{1}{2}$  gr. to 10 oz. of water is enough. For brown tones (see p. 121 "Amateur Photographers' Annual," which every amateur ought to possess). Use the following:

Stock Solution:  
Borax ... .. 330 gr.  
Acetate of soda ... .. 180 "  
Bicarbonate of soda ... .. 90 "  
Water ... .. 20 oz.

Bath:  
Stock solution ... .. 10 dr.  
Gold ... .. 1 gr.  
Water ... .. 10 oz.

Use two hours after mixing. Fix in weak hypo bath for twenty-five minutes.—PHENIX.

4742. **Copying.**—Arrange the photograph to be copied so that an oblique light falls on it; then place a mirror so as to throw the light in the reverse direction. The shadows cast by the grain in the paper will thus neutralise each other.—GREENWOOD.

4743. **Good Half-Plate Lens.**—You could, I think, get a good half-plate rapid rectilinear lens which would suit your purpose from Mr. A. Brooker, 52A, Robertson Street, Hastings, on the terms you mention (payment by instalments).—PEN.

4744. **Wiesbaden.**—You will be at liberty to take photographs wherever you like. The scenery is exceptionally picturesque; do not miss the Nersberg and the Russian (Elizabeth) Chapel. Very likely you will be able to get English plates; should you have any difficulty about it, write to any of the best houses in Frankfurt-on-Main, which is but forty miles away. You will have no trouble with the customs if you put the usual labels on the dry plate boxes. Do not attempt to tip any official.—NOXALL.

4745. **Bromide Printing.**—Give a shorter exposure to the paper and, if you are using the iron developer, reduce the proportion of oxalate of potass.—THE SMITH.

4745. **Bromide Printing.**—I would imagine that "Coptic's" prints are over-exposed, and that the high lights begin to discolour before the shadows have had time to gain density. Are the solutions saturated, assuming he uses ferrous oxalate? and is he using enough iron?—GREENWOOD.

4745. **Bromide Printing.**—I think "Coptic" could not have gone through the process quite correctly; he either under-exposed or under-developed the print to start with, or the print was not in the water quite long enough after developing; the print was too long in the fixing bath, or he did not let the print remain in water for at least ten minutes after taking the print out of the fixing bath, or he blotted the print with blotting paper. Never blot the bromide prints with blotting paper; always let them dry themselves by laying them on something flat. Any of these faults will do something towards getting a bad coloured print when finished.—W. H. ELLIS.

4747. **Photographs Wanted.**—In answer to "O. F. Yonge's" enquiry I beg to say my garden adjoins the churchyard at Heckington, Lincs. I am only a beginner at photography, but should be glad to do my best and send a photograph of the recess in the channel, formerly used as the Easter sepulchre. Would "O. F. Y." kindly write to me direct and I will do my best to help him.—D. G. HARRIS, St. Andrew's Villa, Heckington, S. O., Lincolnshire.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us before TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

A. B.—(1) Fully exposed, and rather under-developed. (2) Over-exposed. (3) Over-exposed. (4) Correctly done. (5) Slightly under-exposed. (6) Over-exposed. (7) Slightly under-exposed. (8) Correctly exposed. (9) Under-exposed. (10) Under-exposed. Most of your negatives would stand further developing. You do not allow for the fact that the colour of the deposit is not so non-actinic as that of pyro.

H. F. FAY.—(9) Under-developed. You might cut off 2 in. of foreground, and 2 in. from right hand. (10) Under-exposed; too much top light. (11) Over-exposed and over-developed. You had better sun your river, so as to reduce its whiteness. (12) Very fair indeed. (13) Lighting very poor.

J. H. W.—(1) Good; only wants a little life in it, a few pigeons, cocks, and hens. (2) Spoilt by the figure. (3) Good. (4) The best. (5) Excellent. These last three are very good. The technical work is good. You ought to stand a chance in some of our competitions.

BEE.—Yes, part of the roof should be glazed as much as you can spare, and one side should be entirely closed in.



H. M. D.—We have sent your reply to Miss C. F. Yonge.

Mrs. CLEASBY.—The medal was sent off as advised. We have no doubt it reached Penoyre.

CHAS. FULLBROOK.—The formula will be found in the *AMATEUR PHOTOGRAPHER* of Sept. 28th, 1888.

L. R.—You will find the finders made by Taylor, Taylor, and Hobson, to be had of any dealers, the best, and they will supply you with the right size for 7½ by 5.

G. F. DIETRICH.—Send your complaint to the Photographic Dealers and Manufacturers' Association, 7, Southampton Row, W.C.

A. C. H.—We should be greatly obliged if you would send us an article, "Holiday Resort," on "The Valley of the Wye." Shall be pleased to see you when you are in town. Always "At Home" Monday afternoon.

ARTHUR JANE.—Very many thanks for article on "Bodmin and Neighbourhood," which we shall use shortly.

ASPIRANT.—(1) The formula may possibly be published in a future issue of the *Camera Club Journal*, but we are not in possession of it. (2) Many have done good work with the plates you name. If you do change, try the Paget. (3) The lens you name will do very good work, and, for the price, is an admirable instrument.

A. B. EDWARDS.—Certainly; hope you will enter both competitions. You will have received "Photography at Home" entry form.

H. F. LINGING.—Pressure of work has prevented us from testing your paper, but we hope to do so this week.

BOSTON.—All your negatives are fogged in developing, either from the light or from using too much accelerator. (1) A well chosen bit, and would have made a picture had your figures been fishing. (2) A little too much uninteresting foreground; this negative shows unequal patches in consequence of the developer not covering the plate evenly. (3) Your camera was not level, and, consequently, the weir is all on the slant; again, your figures should be doing something beside staring into the camera. If you like to expose a couple of plates we will develop them for you, to show you what a well developed negative should be.

DOCTOR.—(1) This negative is not sufficiently developed and the developer did not flow evenly over the plate; the print is flat and over-toned, the black spots on the back are due to iron or pyro. (2) Negative good; we cannot approve of the cotton-wool clouds. (3) Negative under-developed and print, consequently, flat. (4) Very poor. (5, 6, 7, 8) All these prints are under-printed and over-toned. To avoid getting the sky so dense it is advisable to commence development with about one-tenth of a grain of pyro to the ounce, then, when all detail is out, add more pyro and bromide.

YOUNGSTER.—(1) A good retouching medium may be made by dissolving:

Gum dammar	...	...	10 gr.
Canada balsam	...	...	5 "
Turpentine...	...	...	1 oz.

Drop a drop or two on to the negatives and rub in circles with the tip of the forefinger till nearly dry, then leave for half an hour to dry thoroughly. (2) You are over-exposed and have obtained reversal of the image; give a shorter exposure. (3) The exposure for the Paget xxxxx. would be practically the same; we should prefer the above-named plates. (4) Over-exposure is again the cause of your reversed images, unless you are using a drop or two of hypo as an accelerator. (5) No, you cannot intensify a silver print.

W. BRANSON.—(1) Over-exposed; at least 1½ in. off foreground would improve it. (2) Over-exposed; we should have thought about half to one-third of the exposures you gave quite sufficient. Never soak your plate in water first, and use less ammonia to start with. The larger the stop and the shorter the exposure within reasonable limits the more brilliant the picture. Try again and let us see some more results.

B. T. ROBINSON.—Negatives: (1) Frantically over-exposed. (2) Ditto; when you want to dry negatives quickly place them in methylated spirit for ten minutes and then in a good current of air; don't dry before the fire, especially negatives developed with hydroquinone. Prints: (1) Good. (2) Good. (3) Under-printed, and a little sharper focussing in the foreground would improve it.

SNOWD.—

Hydroquinone	...	...	90 gr.
Sodium sulphite	...	...	2 oz.
Carbonate of soda...	...	...	2 "
Bosin...	...	...	1 gr.
Distilled water, to make	...	...	10 oz.

Dilute with four times the quantity of water for normal and six times the quantity for over-exposure.

A. T. WEBB.—Use stop marked 18. The numbers refer to the ratio aperture of the diaphragms and relative time of exposures.

AMATEUR PROFESSIONAL.—Thank you very much for MS. (1) The method you propose for washing prints is certainly the best for freeing prints from hypo. (2) The lenses named are not English make and it's a question of luck as to getting a good one.

LLEWON.—You say you were afraid of dull weather

and yet took a slow plate with you. Had you taken the xxxxx. plate you might have got good results. If you have still some undeveloped plates send us up half a dozen.

REX.—We should be perfectly satisfied from the print you send that the lens which was used could turn out good work.

H. I. C.—We think it is due to some fault in your manipulation. Please let us know exactly how you developed it.

F. READ.—(1) Out of focus and badly developed. (2) Over-exposed and wrongly developed. (3) Out of focus, under-exposed, and badly developed. (4) Out of focus, under-exposed. (5) Under-exposed. (6) Under-exposed, badly developed, unequally toned, and print stained with pyro. You ought to do better than this. Let us know what apparatus and plates you are using and send us up a couple of exposed plates with full particulars, and we will develop, print, tone, and return you.

H. F. LINGING.—(1) Exposure about 1 sec. with the sun, 4 secs. at 5 p.m., 2 secs. on a dull day. (2) About ½ sec., 1 sec., and ½ sec. The relative exposure would be for f/22 = 1 sec and f/32 = 2 sec.

J. B.—See next week's issue.

CHAS. H. MEDLOCK.—(1) The usual method to remove iridescent stains is that suggested by Abney: soak the plate in

Ferric chloride	...	...	50 gr.
Potassium bromide	...	...	40 "
Distilled water	...	...	4 oz.

for two or three minutes, wash well and redevelop with ferrous oxalate, then refix in hypo. (2) You might try treating the ferrotype with the following:—

Mercury bichloride	...	...	10 gr.
Distilled water	...	...	1 oz.
Methylated spirits	...	...	4 "

when the image will probably show up a little more, then wash and allow to dry. We are glad you find our paper useful, and shall be pleased to help you at any time and criticise prints for you.

W. T. BARTON.—The negative is certainly fully exposed; we should strongly recommend you to try a thicker coated plate. Thirty minims of pyro ought to give you plenty of density, and good black negatives are not always the ones to give the best prints. The peculiar colour given by the developer you use is rather in your favour as giving far more harmonious results than a black and white negative.

S. ARMSTRONG.—(1) The speed necessary to take trains and race endings depends entirely upon the rate of motion of moving object, distance of same from the camera, and focus of lens. Let us know these three data, and we will help you further. (2) No, we believe there is no firm that lets out hand cameras on hire. Thank you for your offer, we may take advantage of your kindness presently.

OLINDA (Godalming).—We were unable to decipher your signature. The cause of your stained prints is probably due to not washing between toning and fixing. If you use carbonate of soda for making bath alkaline, use the same for the hypo. Provided you wash thoroughly and quickly, it is not necessary to use either salt or soda before toning, though either may be used. Salt is said to give a brown tone, soda a purple. It is not advisable to acidulate the bath, merely keep it, and use instead of water to dilute the new bath. Always pleased to help you.

R. E. J. T.—The plate was not in sharp focus; it seems to be developed all right. The print was not printed half deep enough; the hypo is about right strength, though you might add a little more ammonia without any harm. Blisters may be avoided by careful attention to the temperature of solutions, using salt to wash the prints in before and after toning, and keeping the prints face downwards in all solutions.

M. G. P.—(1) Certainly, the shutter is quite quick enough. (2) The exposure is the same as in England. (3) Powell's Tabloids would be a very convenient form, and merely require dissolving in water and the addition of a little sodium hydrate. Write to Powell direct, and ask him to send you a circular about his developers, &c.

CANTUAR.—We should prefer the B lens, because it is made of the new Jena glass and will therefore enable you to actually use a larger aperture compared with A. On the other hand, A is a first-class lens, and has the advantage, from its shorter focus, of having objects nearer to it in focus than B, but B would give more pleasing perspective. Probably some of the higher price is due to the name.

PERSEVERANCE.—We cannot criticise the photographs you have sent, if you intend entering them for the "Public Schools" competition, but by all means go in for it. Entry form is sent you.

JAMES WOOD.—Noted as requested. The man you mention was only a "make-believe editor," and must not be ranked with the noble army of martyrs.

REV. J. CHAPPEL.—We have written to you. The maker is thoroughly reliable, and the camera may be sent us for inspection before being sent on to you, should you give him an order.

L. MONSON.—Your letter is not published, as it throws no light upon the subject, "What is an Amateur?"

JAMES WOOD.—Have noticed, as requested.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the *AMATEUR PHOTOGRAPHER* will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the SELLER to him to the offices of the *AMATEUR PHOTOGRAPHER*, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.

N.B.—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

"Amateur Photographer," etc.—*AMATEUR PHOTOGRAPHER*, vol. ii., bound, cloth, clean, cost 12s. 6d., free 4s. 6d.; vol. viii., unbound, clean, cost 4s. 6d., free 2s. 6d.; extra 1s. numbers taken part exchange.—Hedderwick, 41, Garsard Hill, Glasgow.

Backgrounds.—Backgrounds, canvas, on rollers, 6 ft. by 8 ft., 11s. 6d.; 7 ft. by 8 ft., 16s. 6d.; 8 ft. by 8 ft., 20s.—M. Mullen, 203, Camberwell New Road, London, S.E.

Bicycles.—Safety, bargain. Will accept £7 17s. 6d. for diamond-frame Safety, fitted with cushion tyres, ball bearings to all parts (including pedals), beautifully plated and enamelled, good make, perfect condition, new this year, no fault whatever, splendid machine; approval willingly; satisfaction certain.—T. E. W., 33, Alexandra Road, Ipswich.

Cameras, etc.—Half-plate camera, with all movements, best leather bellows, and three double-hinged dark-slides, also tripod and stand, all new, and the best of workmanship; price £5.—H. Atkinson, Boughton Heath, Chester.

Whole-plate camera, three slides, tripod stand (very strong), two fronts, in splendid order, almost new; £6 only; approval of Editor.—H. Holt, Conservative Club, Liverpool.

Lancaster's Merveilleux or Meritoire quarter-plate camera, cheap.—7, Linscott Road, Clapton.

Watson's 12 by 10 Premier camera, brass-bound, three double dark-slides, extra front, and sliding tripod, by same maker, all new a few months ago, hardly used, also a canvas background, 6 by 5; the lot for £18 4s.—P., 12, Sydney Road, Richmond.

Lancaster's quarter-plate Special camera and three double backs, brass-bound, long extension, reversing back, etc., perfect; sell for £2.—G. E. Franklin, Rickmansworth.

What offers for Lancaster's half-plate camera, with three double slides, instantaneous shutter, stand, and waterproof case? or would exchange for Safety bicycle.—Address, 90, Oxford Street, Manchester.

Lancaster's quarter-plate Instantograph, with patent adjustable diaphragms and instantaneous shutter, nearly new, with tripod stand, and two mahogany double slides; cost £3 10s.; price 30s.—No. 168, *AMATEUR PHOTOGRAPHER* office, 1, Creed Lane, London, E.C.

Cameras, Lenses, etc.—Lancaster's half-plate 1890 Instanto, four mahogany double slides, Albion rectilinear lens, waterproof bag, with lock, good as new; £6; approval; deposit.—Berry, Oxford Street, Stockton-on-Tees.

Quarter-plate Scliptoon Co.'s camera, rising and cross front, reversible swing-back, six double slides, alpenstock stand, lens, drop shutter, in solid patent leather case, cost over £6, will take £3; also new half-plate oak sliding stand, 10s. 6d.; half-plate landscape lens, 8s. 6d.—Riley, Stationer, Handsworth, Birmingham.

Whole-plate camera and lens; cost £3 three



months ago; will sell for 5 guineas.—May, 4, Rosina Street, South Hackney.

Quarter-plate box camera, with excellent portrait lens and double dark-slide, also single stereoscopic camera and lens (no dark-slide), by Stereoscopic Co.; 35s. the lot.—Barclay, Milton, Gillingham, Dorset.

Marion's enlarging apparatus, lens, special table, with sliding top and easel, quite perfect; cost over £10; best offer over £5.—Jones, Enfield House, Uffculme, Devon.

Half-plate 1891 Lancaster's Instantograph camera, dark-slide, tripod, f/8 R.R. lens; bargain, 72s.—53, Slad Road, Stroud.

Half-plate camera (Stereoscopic Co.), double extension, rising front, reversing and double swing-back, with four double backs, splendidly made, £5; Dallmeyer's triple achromatic lens, with stops, complete, in perfect condition, 40s. (list price £4 4s.); good exchange entertained.—J. T. Field, Montana, Blackheath, S.E.

Whole-plate Optimus wide-angle camera, latest improvements, new, one double slide, and sliding tripod, accept six guineas; whole-plate Taylor and Hobson's R.R. lens, Iris diaphragm, new price £3 19s.—6, Montford Place, Kennington Green.

Lancaster's 1891 special brass-bound quarter-plate Instantograph, three double backs, best lens, Iris diaphragm, See-Saw shutter in case, with lock, tripod, lamp, dishes, printing frames, plates, paper, etc., all quite new, complete outfit; £4.—Edwin Jewett, Matlock Bridge, Derbyshire.

Camera (Bilicoff), half-plate, three double cells, quarter carriers, landscape lens, and 3-fold tripod; £4 10s.; a bargain.—Roberts, jun., 37, Great Western Road, Glasgow.

7 by 5 Optimus wide-angle Euryscope lens, 72s.; half-plate brass-bound camera and one slide, long extension, and all movements, made to stand any climate, condition as new; 65s.—Amateur, 15, Bates Street, Steel Bank, Sheffield.

**Dark-Slides.**—Three half-plate walnut double dark-slides, so 10, good condition, each 6s. 6d., three 18s.; Kershaw shutter, 2 in. hood, blind, slightly damaged, 7s. 6d.—E. Winn, Uplands, Selly Hill, Birmingham.

**Hand-Cameras, etc.**—Quarter-plate Optimus mahogany brass-bound hand-camera, six double dark-slides, Taylor's detective lens, Iris diaphragm, also Optimus rapid view lens, can be used on a stand for focussing, two sunk view-finders, adjusted to focus of lens for vertical and horizontal pictures; cost £11; price £8.—Fred. Holmes, French Embassy, Albert Gate, London, S.W.

For sale, a bargain, stereoscopic hand-camera, built to special order, at a cost of considerably over £30, fitted with a pair of Dallmeyer's patent stereograph lenses, capable of working at f/4, Wollaston's patent diaphragmatic shutter, with revolving stops, facilities for using lenses as single (landscape) combinations, six double backs, with vulcanite slides, etc., etc.; price £15 cash; may be seen by appointment.—Address, E. R. Shipton, 140, Fleet Street, E.C.

No. 1 Kodak, cost £5 5s., first-class condition; price 60s., or offers requested.—Dr. Hodges, Park Road, Gloucester.

Magazine hand-camera, 12 quarter-plates, with Facile shutter and sunk finder, without lens; 16s.

or good exchange.—J. T. Field, Montana, Blackheath, S.E.

5 by 4 hand-camera, with rack and pinion, two finders, six Blair's feather-weight double backs, no lens, £3; Instantograph quarter-plate, with Ross' lens, £1 10s.—No. 169, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Lantern.**—Watson's £6 6s. optical lantern, as new; 80s.; approval.—Avery, 45, Park Street, Dorset Square, London.

**Lenses, etc.**—Lancaster's half-plate Instantograph lens, Iris diaphragm and shutter, folding tripod, brass top, one double back, vulcanite; cost £2 2s.; price 25s., or will sell separately.—Mark Smith, Louth, Lincolnshire.

A 9 by 7 Optimus rapid Euryscope, new and perfect; cost £6 6s.; take £4 10s.; approval; deposit.—W. B., 59, Freshney Street, Grimsby.

5 by 4 rapid rectilinear, Iris diaphragm; 23s. 6d.—G. Clough, 33, Magpie Road, Norwich.

Optimus 7 by 5 rectilinear lens and pneumatic shutter; 40s.—43, The Grove, Vauxhall.

Dallmeyer's No. 1AA wide-angle rectilinear lens; price £3 8s.; perfect condition.—J. H. Walker, 87, Union Terrace, York.

Half-plate rapid rectilinear lens, with Iris diaphragm, Hockin's Desideratum, nearly new; will take 30s.—Can be seen at the AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Splendid half-plate rapid rectilinear doublet lens, f/8, new; bargain, 21s. 6d.—John Slade, Slad Road, Stroud, Glos.

10 by 8 Optimus rectilinear lens, fitted with Newman's shutter and Waterhouse diaphragm, both nearly new; cost £7; cash £3 15s.—Reeves, 24, Harvard Road, Lewisham.

**Microscope.**—Excellent microscope, three powers, and accessories, in mahogany case; 45s.—Jones, Enfield House, Uffculme, Devon.

**Sets.**—Splendid whole-plate set, as good as new, Sands and Hunter's patent Imperial camera, extra-long focus, double patent swing reversing frame, with Ross' rapid symmetrical 10 by 8 lens, fitted with Thury and Amey's £3 10s. regulating shutter, the fastest and best shutter made, in leather case, complete with three double dark-slides; cost £27; sacrifice, bargain, £16 10s.; can be seen at address below.—Mitchell, Watson and Sons, 313, High Holborn, W.C.

**Sundries.**—Amateurs, have a good model. Send 1s. for six high-class negatives, by professional (deceased).—Richford, Wells, Norfolk.

Case, solid leather, lock and key, to hold 12 by 10 camera, 3 double dark-slides, lens, and tripod head, new, been used three times, first-class bag; 25s.—Henderson, 22, Montague Place, Russell Square.

Five pairs of pet rabbits; first reasonable cash offer gets them.—William Robinson, Castlederg, Tyrone.

**Tripod.**—Whole-plate tripod, mahogany top, very rigid; 13s. 6d.; cost 20s.—G. Clough, 33, Magpie Road, Norwich.

Alpenstock tripod, perfectly rigid, weight 1 lb., carry quarter or half plate, new; price 12s. 6d.—Hyde Parker, 77, Burton Road, Derby.

**Type,** 150 robber-faced, holder, pad, ink, etc., suitable naming negatives; approval; 7s. 6d., cheap.—Barton, Morrington, Elgin.

## WANTED.

**Cameras, etc.**—Lancaster's 1890 or 1891 pattern Instantograph quarter-plate, cheap.—H. Thompson, Brownlow House, Grantham.

**Dark-Slides.**—About three quarter-plate dark-slides, Tylar's preferred.—Webb, 65, Woodstock Road, Finsbury Park, N.

**Hand-Cameras, etc.**—First-class hand-camera, reasonable price; approval.—Chemist, 8, Strand, Torquay.

**Lenses, etc.**—A wide-angle rectilinear lens, half-plate, in exchange for new detective camera, cost 35s.—Firth, Oakleigh House, Wakefield.

Second-hand 10 by 8 R.R. lens, English, and 3 or 4-fold tripod for 10 by 8; exchange or sell half-plate photographic lens, with stops, 30s.—D. Harrold, 1, Valleyfield Street, Edinburgh.

**Sets.**—Lancaster's half international set, complete, without lens, cheap; cash.—Pridden, Jeweller, Weymouth.

Quarter-plate set, not more than 30s.; approval.—Particulars to Lynas, News Office, Redcar.

**Shutters.**—Furnell's shutter; give exchange Andersen's skylight and dark-room.—Valentine, Southampton.

Time and instantaneous shutter, to fit 7 by 5 Optimus Euryscope lens, also half-plate wide-angle lens.—T. O. Hosking, 1, Baldwin Crescent, Camberwell.

**Sundries.**—Luggage carrier (bicycle), quarter hand-camera, half tripod.—Edward Rouse, 3, Hethe, Bicester.

Good half-plate printing frames, in exchange for numbers of AMATEUR PHOTOGRAPHER, "English Mechanic," or "Carpenter and Builder."—Sutcliffe, 14, North Street, Burnley.

"Photographic Quarterly," No. 1; "Photographic Reporter," Nos. 1 and 2; state price.—Address, S. Armstrong, Enniscorthy, Ireland.

**Tripod.**—Walking-stick tripod; approval.—Particulars and price to Chemist, 8, Strand, Torquay.

**Views.**—Views, Cornwall; would purchase negatives (north coast) if suitable.—Bullmore, Newquay, Cornwall.

## A WANT SUPPLIED.

**THE 'SENSIBLE' FOCUSING CLOTH.**  
It protects Camera. It makes focussing easier. It does not flap about. It prevents fogging when dark slide is drawn out. The Camera can be folded up in it.

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T. MANSON, 37, HIGHGATE, KENDAL,  
Or through any Photographic Dealer.

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**DICTIONARY OF PHOTOGRAPHY.** By E. J. WALL. New and revised edition, 2s. 6d.

It contains more information on Photography than any book published.

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The only book published that gives complete instructions as to how to make lantern slides, purchase and work the optical lantern.

**ART PHOTOGRAPHY.** By H. P. ROBINSON. 1s.; cloth, 1s. 3d.

In this book Mr. Robinson deals with Art in a manner which the student can understand and appreciate. No amateur should be without it.

**ART OF RETOUCHING.** By J. HUBERT. 1s.; cloth, 1s. 3d.

The cheapest manual on "Re-touching," written by one who knows, for those who wish to learn.

**PLATINUM TONING.** By LYONEL CLARK. 1s.; cloth, 1s. 3d.

This book has revolutionised printing processes. The instructions given by Mr. Clark permit of obtaining the most delightful range of tones. Every one should buy a copy, and learn how to do it.

**EVENING WORK.** By T. C. HEPWORTH, F.C.S. Just Published, cloth, 2s. 6d.

This is a most delightful book, from which any number of good things may be learnt. The Chapters on the application of the ELECTRIC LIGHT to photography are most interesting and instructive.

NOTE.—Any Photographic Publication can be supplied by Messrs. HAZELL, WATSON, & VINEY, LD., and a full list of books upon Photography will be sent upon application.

London: HAZELL, WATSON, & VINEY, LD., 1, Creed Lane, E.C.

**PICTURE MAKING BY PHOTOGRAPHY.** By H. P. ROBINSON. Cloth, 2s. 6d.

Is a book for the art student to study carefully. The examples given will help him materially to make pictures.

**EXPERIMENTAL PHOTOGRAPHY.** By CLEMENT LEAPER, F.C.S.

1s.; cloth, 1s. 3d.

This book is a guide for the beginner, and traces the whole course of work for any one taking up photography. It should be the constant companion of the Amateur Photographer.

**CAMERAS, LENSES, AND SHUTTERS.** By Sundry Writers. 1s.; cloth, 1s. 3d.

This book contains many valuable articles upon apparatus, contributed to the *Amateur Photographer* competitive papers, and which were awarded prizes.

**DEVELOPMENT.** By LYONEL CLARK. 1s.; cloth, 1s. 3d.

A very handy book on developing, which should be read by all; it also contains an article upon the use of Eikonogen. Mr. Clark's successful photographic work should induce many to acquire a knowledge of how it's done.

**A TOURIST'S EQUIPMENT.** By Rev. PRECENTOR MANN, M.A. 6d.

A very useful little pamphlet, giving the most complete instructions as to what kit to take, how to use it, and other useful "tips" for the touring photographer.

**PRIZE PICTURES: THREE WEEKS IN NORWAY.** By PAUL LANGE. 2s. 6d.; cloth, 3s. 6d.

This book contains several most beautiful views of Norwegian scenery from negatives by the author, also a brightly written account of the trip. The illustrations are allowed to be some of the finest ever produced.



## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.*

*Birmingham Daily Gazette, "A Day with the Warwickshire Survey." The writer says:—*

"There were lions in the way when the scheme was first mooted. Who was to find the money? Who should edit the Survey? Who could spare time, trouble, and cash for a philanthropic task involving years of hard work? One by one these objections are in the way of being answered. To begin with, a Hundred has been successfully surveyed in another country, and in America, where the survey of a shire would seem a trumpery job, an enterprising photographer has managed to put some 600 miles of river through his camera, and present a complete panorama of its every reach and turn and swirl and rapid. The editor can be evolved as the work proceeds, and the cost can be counted when the work is fairly in trim. Already some hundreds of negatives have been taken and stored and arranged as the nucleus of the Survey; and now the Birmingham section has arranged a series of excursions intended to cover this season's work. The Hundred of Hemlingford is to be mapped this year in some half a dozen formal trips, and half a hundred individual tours. Since May opened, scores of photographers have been steadily at work every week; and if when the weather brightens into a semblance of summer, the number will be trebled, and a thousand photographs of more or less direct value taken every month."

We understand the work of the Survey proceeds rapidly. The Committee are energetic men, and a survey upon the lines laid down by them will be most valuable. Of course, it is not interesting to the dilettante photographer to have his course mapped, and to be instructed as to what he is to take; still, he must remember the work he is helping in will be priceless in a few years, and, after all, is of far more real worth than much of the so-called picture making. Many lessons will be learnt whilst out with the Survey, and notes can be made of places to visit and pictures to be secured at another time.

TUESDAY'S *Birmingham Daily Gazette* had a leader on "Photography," in which the art-science, its pleasures and its profits, are set out in the following lines:—

"The burst of true summer weather which has given us golden days of lengthening light such as make the month of June famous, has afforded the amateur photographer his long-awaited opportunity of pursuing the most delightful and most useful pastime which has been discovered for leisure hours. It is remarkable how enthusiastically this hobby—if we may so describe it without appearing flippant—has been adopted by people of all ages and of either sex. The school-boy may be seen with his detective camera taking snap-shots at his own sweet will at every passer-by. Every young lady deems it necessary to photograph views of the places she visits on her holidays, and in all the popular resorts she may be seen viewing scenery with a professional eye and talking mysteriously to her friends of dark-rooms and sensitised plates, and 'hypo solutions,' and alum baths. Superior people speak loftily of all

**OUR VIEWS.**—The "Photography at Home" Competition—"Public Schools" Competition—A Day with the Warwickshire Survey—The *Birmingham Daily Gazette* on Photography—Halifax Camera Club—The *Electrician* on a Photographic Study of the Electric Arc—Exhibition of Photographs at Falmouth—Death of Mr. D. P. Rodgers—The Convention Meeting at Bath.

**LEADER.**—Varnishes and Varnishing—The Jubilee Costume Ball of the Royal Institute of Painters in Water Colours.

**ILLUSTRATION.**—"Queen Anne receiving Marlborough after the Victory of Blenheim," from a photograph by Disdéri.

**LETTERS.**—Conjugate Foci (The Smith)—A Focussing Cloth (Nox-all).

**COMMUNICATED ARTICLES.**—Studies in Art for Photographers (Lambert)—Diversity in Art (Senex)—Notes on Perspective Drawing and Vision (Emerson and Goodall)—Photography and Fiction (A Nervous Photographer).

**HOLIDAY RESORTS AND PHOTOGRAPHIC HAUNTS.**—Round about Jersey (J. Andrews).

**THE PICTURE GALLERIES.**—Dudley Gallery Summer Exhibition.

**APPARATUS.**—Cameras, Shutters, etc. (Messrs. E. and T. Underwood)—Messrs. Davenport and Co. (Portable Dark-room)—Mr. C. Lawrence (The Clifford Hand-Camera)—Messrs. Loman and Co. (Cameras)—Fry Manufacturing Co (Films, etc.)—Messrs. Taylor, Taylor, and Hobson (Level).

**SOCIETIES' MEETINGS.**—Bedford—Birkenhead—Brighton—Hackney—Harlesden and Willesden—Holborn—Ipswich—Liverpool (Camera Club)—Lowestoft—Spenn Valley—Sydenham—Stockport—Tunbridge Wells—Wakefield.

**QUARTERLY EXAMINATIONS.**

WE would call attention to the close approach of the latest date for entering photographs in the AMATEUR PHOTOGRAPHER "Photography at Home" Competition. This competition is open to all comers, with special classes for past prize winners. All entries must be received on or before the 30th of June.

NEXT week we shall be able to announce the result of our first "Public Schools" Competition. We fear the number of entries will not be numerous, but much of the work already received shows signs of very careful working.

BEFORE very long every branch of the Y.M.C.A. will have a photographic club attached to it. The latest we have heard of is at Manchester. Already some thirty members have been enrolled, and some very fair work is being done. The club is under the presidency of Mr. W. H. Newett; and the Hon. Secretary, Mr. Geo. B. Swann, 56, Peter Street, Manchester, will no doubt be pleased to answer any questions sent to him.

An interesting article appears in a recent edition of the



this as a 'craze,' and think that it will have its day like the guitar, the lap-dog, the spelling-bee, and other trifles in which the feminine mind takes a temporary interest. But we doubt it. If photography simply consisted of lifting a shutter and exposing a plate, the amusement would soon become tedious. Those languid amateurs who are content to 'take' the photograph and leave the professional hand to develop the plate and produce the print soon weary of the play. It is they who penetrate the pleasing mysteries of photography and who master the whole process who find the pursuit grows more fascinating the more it is followed. Besides, there is really no end to the art, or to gaining proficiency in it. There is a deep beyond the deep, and a height beyond the height; and when the amateur has managed to print his first pinky, spottled photograph, he realises that he has still much to learn before he can produce a picture perfect in detail, harmonious in tint, soft and effective, with light and shade well proportioned, the perspective true and the leading features well defined. In order to encourage amateurs to aim at good work, exhibitions are held in various parts of the country, and prizes are being offered for the best specimens of photographic skill."

THERE has existed for some years a photographic society at Halifax, but it has, like, we fear, too many, languished for want of zeal. We understand that it is now intended to form a photographic club with the title "The Halifax Camera Club." Already, at the preliminary meeting called on Monday evening, some forty-two residents in Halifax and district signified their intention of becoming members. Efforts will now be made to obtain suitable premises with studio, dark-room, enlarging-room, a large room for meetings, reading-room, etc. A considerable sum has been promised towards the furnishing fund in addition to the subscriptions. There are to our knowledge many earnest workers in and around Halifax; these should lose no time in communicating with Mr. E. Finlison, Union Bank, Halifax, who has consented to act as Hon. Secretary *pro tem*.

In the *Electrician* for June 5th is an interesting paper illustrated by blocks on "A Photographic Study of the Electric Arc," which gives an account of the photographing of the alternating electric arc and the establishment of the proof of the rapid periodic extinction and re-establishment of the discharge. The method of obtaining the images is described as follows:—

"A camera with long bellows was set up near the lamp, the distances from plate to lens and from lens to lamp being such as to give a somewhat enlarged image of the arc. In the focal plane an opaque screen was mounted, which contained an opening just large enough to receive the image of the carbon points. The apparatus having been adjusted, a sensitive plate was driven past the aperture at high speed. The photographic image differed from that observed in a revolving mirror, chiefly in the relative brightness of the arc proper, and of the incandescent carbon of the points. To the eye, the latter is the dominant feature; whereas the *actinic* image of the arc far exceeded in intensity that of the carbons."

THE summer season is again marked by our receiving the prospectus of the photographic section of the exhibition of the Royal Cornwall Polytechnic Society. The fifty-ninth exhibition of the society will be held at Falmouth, and be opened on the 25th of August, and medals are offered for work done by professional and amateur photographers in the following classes:—Landscapes, Portraits, Composition Pictures, Instantaneous Pictures, Interiors, Transparencies, Pictures by Improved Processes, and Enlargement Landscapes. Medals are also offered for improved apparatus and appliances. Information, entry forms, etc., may be obtained of Mr. W. Brooks, Laurel Villa, Wray Park, Reigate, or of Mr. Edward Kitto, The Observatory, Falmouth. Photographs must be received at the Polytechnic Hall, Falmouth, not later than August the 18th.

MANY of our readers will hear with much regret of the sudden death of Mr. D. P. Rodgers, a very active member of the Committee of the Camera Club, and one who, we understand, rendered much service in establishing the Club in their new home. Mr. Rodgers did not exhibit extensively, but was much given to making experiments, and contributed the results of his work in several papers read before photographic societies.

WE have received a letter from Mr. C. H. Bothamley, F.I.C., F.C.S., President of the Photographic Convention. We regret that it came to hand too late for insertion, but the principal points which he calls attention to are:—

"That the Convention has amongst its adherents a very large proportion of the best-known amateur and professional photographers in the kingdom, and affords the best existing means of bringing together photographers from all parts of the country, and thus enabling them to meet their fellow-workers in the art, and discuss with them its later developments and the means of promoting their common interests.

"The President of the Bath meeting will be Mr. William Bedford, whose name and work are familiar to every photographer, and his well-known tact and skill in the conduct of affairs are a guarantee that the control of the arrangements and the guidance of the discussions which it is hoped will follow the papers, will be in safe hands.

"With the help of our friends at Bath, we have been able to arrange a programme which, both from the point of view of excursions and papers, will compare favourably with that of previous years.

"We shall have considerable facilities for making excursions from Bath, either singly or in parties. During the week of the meeting, the Great Western, the Midland, and the Somerset and Dorset Railway Companies will issue to any member, on production of his *signed* ticket of membership at the booking office at Bath, return tickets at a single fare to any station on their respective lines not more than fifty miles distant.

"The excursions are of special interest, and, as already announced, include Chepstow and Tintern, Glastonbury and Wells, Salisbury, Corsham and Lacock Abbey, Bristol and Clifton. In addition, the Local Committee has obtained permission for members to photograph in the churches and other places of interest in and about Bath.

"The papers are fewer in number than in previous years, with a view to prevent hurry, and to give time for discussion which hitherto has often been cut short in order to make way for the following papers. The paper by Mr. W. Lang, on the 'Photographic Work of Herschel and Fox-Talbot,' and that by Mr. Common on 'Recent Work in Astronomical Photography,' are especially appropriate at a meeting in a district that is so intimately associated with the names of Fox-Talbot and of Herschel.

"One very important feature of the meeting will be the final report of our Lens Standards Committee, and the discussion thereon; and the discussion on International Standards that Mr. Warnerke has promised to open. It is proposed to appoint a committee to draw up a report or series of recommendations for presentation at the forthcoming International Congress in Brussels.

"An exhibition of lantern slides will form one of the features of the opening meeting, and it is particularly requested that members who have slides of places visited at the last Convention, whether actually taken during the Convention meeting or not, will send them to me at the Yorkshire College, Leeds, or to Mr. W. Bedford, 326, Camden-road, N., at least a week before the opening meeting."

We would remind our readers that the annual subscription to the Convention is only five shillings. The work of the Society is well worth supporting, and those who can spare the time will have little reason to regret becoming members and spending a week in the society of their fellow workers. Bath offers many inducements, and the excursions have been arranged to give work for the photographer and pleasure to those who make the Convention their annual holiday. Mr. J. J. Briginshaw, the Hon. Secretary, 128, Southwark Street, S.E., or the Hon. Local Secretary, Mr. E. J. Appleby, 8, Argyle Street, Bath, will send programmes on application, and give every information. The week will open with a reception on the 6th prox.



## VARNISHES AND VARNISHING.

NEGATIVE VARNISHING is an operation by no means generally practised amongst amateurs. Some are careful to varnish every negative, and others only do it spasmodically, the majority leaving it alone altogether. Possibly one reason is that with most of the varnishes on the market the negative has to be warmed, and it is entirely a matter of practice to be able to successfully varnish a negative without getting any varnish on the back of the plate, and without showing any waves of double thickness. The following notes may be of assistance in this respect.

We shall first of all consider the manufacture of a varnish, and then the manipulation of the same. Negative varnishes are almost exclusively "spirit varnishes," though occasionally other solvents are used. The idea of a varnish is to provide a coating of some substance which is practically impervious to moisture, and thus protect the gelatine or image-bearing film from damp; and further to provide a protection for the gelatine against accidental mechanical injury. The chief use of a varnish may also be stated to be to form a protective coat against absorption of free silver nitrate in certain silver printing processes. A question often asked by amateurs is, whether varnishing is a necessary operation, and whether taking one proof from a negative before varnishing is liable to cause silver stains? To these questions we unhesitatingly answer that not one proof even should be taken from a negative without varnishing, or in some way preventing the possibility of silver staining, which is very much easier to prevent than to cure. One method which has been suggested is to place a sheet of thin mica between the film and paper, and the consequent slight depreciation of sharp focus is by no means disturbing in a proof. Celluloid might be used for the same purpose.

There are innumerable formulæ for varnishes extant; but we shall content ourselves with two or three well-tried formulæ, premising that it is desired to make the varnish one's self. Many are content to buy commercial varnish, and such may certainly be relied upon. The first formula is one by W. K. Burton:

Gum juniper	..	..	..	2 oz.
Venice turpentine	..	..	..	$\frac{1}{2}$ "
Oil of turpentine	..	..	..	1 "
Methylated spirit	..	..	..	20 "

Gum juniper is the trade name for sandarac, and the above quantity should cost at the outside eighteenpence. Burton recommended gum juniper as being preferable to sandarac, but the one is merely the trade name for the other; he also recommended alcohol, sp. gr. .825, but if pure methylated spirit, 63 over proof, be used, the cost is nearly one-half and an equally efficacious varnish obtained. This varnish is of a very pale colour, and the film will stand a good deal of hard usage without cracking. With this, however, the negative must be warmed. Crystal varnish may also be used for negative work, but it will not stand such rough wear, and also requires heating in cool weather, or it will not dry bright. This is made by dissolving:

Gum dammar	..	..	..	25 gr.
In benzole	..	..	..	1 oz.

Hitherto shellac has been the principal ingredient in negative varnishes, and a good formula of this character is the following:

Orange shellac	..	..	..	2 oz.
Sandarac	..	..	..	2 "
Canada balsam	..	..	..	60 gr.
Oil of lavender	..	..	..	1 oz.
Methylated spirit	..	..	..	16 "

Shellac varnish always requires clearing, there being a wax in the lac which is insoluble in alcohol. This clearing may be effected by shaking up some heavy inert powder, such as

kaolin, prepared chalk, or pumice-stone, with the varnish, and allowing to settle. A quickly made and convenient varnish is to be obtained by diluting

Best white hard varnish	..	..	15 parts.
With methylated spirit	..	..	25 "

the only objection to this being that it takes somewhat longer than usual to dry.

Whilst giving formulæ for varnishes, we append one or two which may be useful in other operations besides varnishing negatives. A good varnish for protecting maps, chalk drawings, etc., may be made as follows:—

Mastic	..	..	..	1 oz.
Sandarac	..	..	..	2 "
Powdered glass	..	..	..	2 "
Ether (methylated, sp. gr. .725)	..	..	..	5 "
Methylated spirit	..	..	..	10 "

The glass is merely used to powder the mastic and sandarac, and to act as a clearing agent, and to prevent the gums from agglutinating at the bottom of the vessel. This varnish must be filtered, and should be applied by means of a spray diffuser, and can thus be applied to enlargements on bromide paper, chalk sketches, etc.

For waterproofing home-made wooden dishes the following will give every satisfaction:—

Colophony	..	..	..	2 $\frac{1}{4}$ oz.
Shellac	..	..	..	$\frac{1}{2}$ "
Turpentine	..	..	..	9 "
Yellow wax	..	..	..	$\frac{1}{8}$ "
Methylated spirit	..	..	..	20 "

Melt the wax in a water bath, and add the resin and lac, and then the turpentine, and finally the spirit. Two coats of this, followed by one of white or yellow furniture varnish, will preserve any tray for a long time, provided alkaline substances are not used in it.

The most successful, or perhaps we should say the varnish which will give the most successful results in the hands of an amateur, is a so-called "cold varnish;" that is to say, one which can be applied without heating the negative, either by flowing on or by the aid of a brush, the former being far more preferable. One of the best known cold varnishes is made by dissolving

Bleached shellac	..	..	..	3 oz.
Borax	..	..	..	1 "
Distilled water	..	..	..	25 "

The shellac must be recently bleached or else it is quite insoluble, and it should be broken up small and heated with the borax and a little water till fairly hot, then more water being added by degrees. This varnish should be filtered and applied with a brush if desired.

By far the best cold varnishes, however, are those made with amyl acetate or acetone. Hydrated acetone may be used as a solvent of gum juniper or sandarac, and a little mastic acid will prevent its chipping; so far as we are aware, such a combination has not been tried as a negative varnish, but it gives a quick-drying hard film. Amyl acetate has been used as a solvent of pyroxylin for making a varnish, and such a solution has been introduced in America under the name of zapon-varnish. According to Max Jaffé (Eder's "Jahrbuch," 1890), this varnish is excellent for gelatine negatives, and is a solution of celluloid in amyl-acetate and acetone. We have not tried celluloid, but the following gives an excellent varnish:—

Pyroxylin	..	..	..	15 gr.
Acetate of amyl	..	..	..	1 $\frac{1}{2}$ oz.

If too thick, a little acetone may be added, or more acetate of amyl. This may be poured on to the film and flowed over the negative like collodion, or if a good thick pool is poured on to the centre of the plate it may be evenly distributed with a camel's-hair brush or glass rod without



showing any marks, streaks, or waves when dry. The only objection to this varnish is that it takes some time to thoroughly dry out. Twelve hours in a warm place is not too long to leave the negative after varnishing. When dry, the film is very highly glazed, and will stand a lot of hard usage and damp without showing signs of distress.

To those operators, however, who are afraid of failure, even with this varnish, we recommend the following plan, which, after two years' trial, we guarantee to be easy of application, a certain preventive against silver stains, and not expensive. The negative, which must be thoroughly dry, is warmed in front of the fire till sufficiently hot to be unpleasant to the back of the hand; then a pad of cotton

### THE JUBILEE COSTUME BALL.

By the courtesy of Messrs. Disdéri, of 4, Brook Street, Hanover Square, we have had the pleasure of inspecting the platinotype prints of the tableaux given by the members of the Royal Institute of Painters in Water Colours at their Jubilee costume ball. There were also separate photographs of each of the ladies and gentlemen included in the groups, and the whole make a collection which is not only of considerable interest but will be of historical value. There were four tableaux: one "The Presentation of the First Prince of Wales," which includes eleven figures, and was designed and superintended by the President, Sir James Linton; another was "Queen Anne Receiving the Duke of Marlborough after the Victory of Blenheim," of which, by the kindness of Messrs. Disdéri, we are able to give a reproduction. It

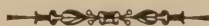
TABLEAU BY MEMBERS OF THE ROYAL INSTITUTE OF PAINTERS IN WATER COLOURS.



Queen Anne receiving Marlborough after the Victory of Blenheim.

(From a photograph by Disdéri and Co.)

wool, linen, or wash leather smeared over with encaustic paste, as used for prints, is rubbed all over the surface, and then a clean pad used to polish till no greasy marks are to be seen. The film of grease thus left on the negative is utterly without effect on any printing paper, and as a proof of its impermeability to water, a few drops sprinkled on a negative thus treated may be wiped off after half-an-hour without showing sign of dampness. If encaustic paste is not to be had, the scrapings of a good composite candle will do equally as well.



was designed and the arrangements superintended by Mr. Charles Cattermole, R.I. Another was "Queen Elizabeth Knighting Drake," which comprised thirteen figures, arranged by Mr. Charles Green, R.I. The other was "The British Empire, 1887," containing eight figures representing the various portions of the empire; a Hindoo girl, an Australian squatter, a North American Indian, a Canadian trapper, etc., with Britannia placing a laurel crown on a bust of Her Majesty. In addition to these four tableaux, there were taken eight photographs of a gavotte which was danced at the ball, the dancers wearing old English dress. As photographs, the effect of the latter pictures is much better than the former; they are full of life and one almost expects to see the dance go on. We must congratulate Messrs. Disdéri on the success of their labours. We are desirous to state that the exhibition of the pictures is open at the Gallery to all photographers, amateur and professional, who would like to see them.

**Photographic Society of Great Britain.**—The rooms will be closed from July 29th to August 4th. The Exhibition of Photo-chromos will remain open daily between 2 and 9 p.m. till the 30th inst.



## Letters to the Editor.

### CONJUGATE FOCI.

SIR,—By the frequent appearance in your "Queries" column of questions relating to the conjugate foci of lenses when used for enlarging or reduction, many photographers must be unaware of the extreme simplicity of the formula for obtaining them. The simplest method is to add 1 to the ratio of enlargement (or reduction), and multiply by the equivalent focus of the lens, which gives the greater conjugate focus. To obtain the lesser conjugate focus divide the greater by the ratio number. For instance, if we are enlarging from 5 by 4 to 15 by 12, the ratio (linear) will be 3 to 1, and with a 7 in. lens the greater conjugate focus will be  $(3+1) \times 7 = 28$  in., and the lesser will be  $\frac{28}{3} = 9\frac{1}{3}$  in.

The formula is best expressed by—

$f + fr = \text{the greater conj. foc.}$

$f + \frac{f}{r} = \text{the lesser " "}$

where  $f$  = the equivalent focus of the lens, and  $r$  = the ratio number of linear enlargement or reduction. If we have a lens of  $8\frac{1}{2}$  in. focus and wish to make a lantern slide to include the full width of a half-plate negative, the ratio would be  $4\frac{1}{2}$  to  $3\frac{1}{2}$  or 19 to 13. Then,  $8\frac{1}{2} + 8\frac{1}{2} \div \frac{13}{19} = 14\frac{6}{19}$  in., the lesser conj. foc., and  $8\frac{1}{2} + 8\frac{1}{2} \times \frac{13}{19} = 20\frac{13}{19}$  the greater.—Yours, etc.,

THE SMITH.

\* \* \* \*

### A FOCUSING CLOTH.

SIR,—Having just become an amateur, I have found, for well-known reasons, the focussing cloth to be the source of much trouble; but a Yankee is always able to help himself, and I have hit upon a device which my friends greatly approve of. I therefore take the liberty of submitting my idea, feeling assured that many others will take it up.

I bought a piece of cloth, measuring 52 ins. by 18 ins., and a piece of elastic band 48 ins. long. The former cost sixpence, the latter fivepence, and therefore the total outlay was elevenpence.

I proceeded to lay the elastic around the back of the camera, and in joining the ends stretched the band about one inch. Of the cloth, I had a bag made, the elastic being let into the front. As the cloth is 6 ins. longer than the circumference of the swing back, it is an easy thing to slip the elastic band, and with it the cloth, over the camera. The back opening I have made smaller, and when slipped over the head, it will remain. To any one who is not perchance obliged to wear eyeglasses, I would recommend to insert elastic into the back opening, so as to make it even more safe. It will be best to secure the shape of the cloth with a few stitches.

Its advantages are evident. You can slip it on or off in a moment, your hands are free, and you can turn any screw of the camera, without hunting for it. If made of waterproof cloth, you can by attaching a couple of loops at each end, make a nice bag of it for camera and slides.

The above description applies to front extension cameras; if you have one of another sort you will have to think a little for yourself.

NOX-ALL.

June 9th, 1891.



**Blue Prints.**—In a communication to the *Engineering News*, Mr. F. H. Latimer states that he has found that adding oxalic acid to the ordinary blue print mixture materially lessened the necessary time of exposure. The solutions used were:—(1) Ammonio-citrate of iron 120 grains, water 1 fluid ounce, to which is added a few drops of strong ammonia solution till the odour is quite perceptible. (2) Potassium ferricyanide 105 grains, water 1 fluid ounce. (3) Saturated solution of oxalic acid. Equal quantities of the first two solutions were mixed together, and to 10 parts of this mixture from 1 to 3 parts of the oxalic acid solution are added just before use, with the result that in cloudy weather the solution containing three parts of oxalic acid prints about ten times as quickly as the pure solution. For ordinary purposes, however, it is better not to add more than 20 per cent. of the oxalic acid solution, or difficulty will be found in getting the lines to wash white.

## Studies in Art for Photographers.

By REV. F. C. LAMBERT, M.A.

### CHAPTER IX.

#### CONSISTENCY, HARMONY, FITNESS.

THERE is observable in all good art, be it poetic, dramatic, or pictorial, a certain three-cornered idea, hard to define, yet easy to recognise and still more easy to become conscious of by its absence, "for when we would, we have it not." This indefinable something comes to us sometimes under one, sometimes under another of the three terms standing at the head of this chapter. It is, however, entirely a secondary matter by what name we shall know it, so long as its presence is desired, and its absence regretted.

We have recently seen that *contrast* often emphasizes and gives precision to the characters of different things; but *consistency*, connecting different parts, tends to emphasize the naturalness of their union—being a mark and feature of the general coherence of parts. When we apply the term *harmony*, it is chiefly with regard to relations of agreement between the parts. And when the *fitness* (or *unfitness*) of any part demands attention, it strikes the mind—as a desirable (or undesirable) element—as something which adds to, or detracts from, the previous state of affairs.

A moment's consideration will also show us that we may apply the terms, or perhaps, rather, the idea, in various ways, e.g., as regards forms, light and shade, etc. But transgressions in this direction, if more obvious, are yet less fatal to fine work—good art—than when there is a want of harmony between the theme and its treatment: the soul and the body are at variance.

Perhaps, after all, we may find "the longest way round the shortest way home," i.e., by considering a few crude examples of *inconsistency*, *discord*, *unfitness*, we may be able to gather some general ideas.

It is at once a curious yet suggestive fact that the first attempt at art criticism made by the uncultured nearly always takes the form of selecting some inconsistency. One has only to mingle with the crowd on a Bank-holiday, in any free picture gallery, to hear the intelligent working man point out that there is no sawdust coming from the saw, no shavings curling from the plane, while his wife remarks upon the absence of soap-suds at the wash-tub, and the small boy observes his pseudo-companion playing marbles with the left hand, and so on. It is true that this is the first step taken from the realist's standpoint, but the next step is very likely to point out the inconsistency of representing a rustic fisherman in a "chimney-pot" hat, or the maid hanging out the clothes when the sunset sky indicates the time for taking them off the line.

It perhaps may require some further measure of cultivated observation to enable us to see that the shadows cast by the twilight, streaming through the window, will be affected by the lamp on the table, or that the expression on the man's face, who is administering medicine to his dying child, is an expression better fitted to the jovial huntsman, relating his last daring adventure. Still more may it require a cultured taste to perceive the lack of harmony between the poetry of some love scene and the realistic common-place nature of the surroundings, and the subsidiary aids used in relating the story; or it may be that few perceive the crude harsh discord set up by the scheme of colour chosen for a delicate portrait study—or that the range of tint and tone is out of feeling with the sentiment of some sombre, cool, quiet landscape.

Here, as elsewhere, no rule can be laid down. Each



case must be examined and treated on its merits. One case may demand stern realism, while another lends itself to idealism. But in whatever way it seems desirable to treat any case, it must always be remembered that the method of treatment must be *consistent throughout*. And this harmony of parts is to be observed as regards emphasising forms, light and shade, grouping, selection of secondary and supporting parts, tint, tone, key, scale, etc.; but alone and through all, the word of command must always come from the theme, the chief and central *idea*, of the picture.

Fortunately, the photographer is not tempted to such misrepresentations as occur to the painter who is free to introduce or omit anything. And it is the painter who, feeling this superior power, is thereby urged to deny the photographer any power of selection (and therefore of composition). This is, of course, entirely a mistake on the part of the painter, and in many cases it would be well were he as restricted to fact as is his oft-despised brother. With painters we are, however, not now concerned, beyond observing the point that the limitations which he does feel are the anchors of salvation for the photographer. An example will make this clear. Suppose the painter is at work upon what he desires to be regarded as a faithful rendering of a certain landscape in which a clump of trees interferes with the sails and rigging of a vessel. The painter will, with as equal freedom of conscience, move his trees to the left or right as he will shift the vessel up or down stream. The photographer perceives at once that as trees are by nature more or less stationary, his only proper course is to bide his time until the vessel moves one way or the other. Hence it is clear that the photographer feels the justness of his limitations as regards adjusting the relative position (presence or absence) of such parts which by nature are open to such relations.

Thus the first great division of truth and untruth is made for him, and he must rely on the culture of his taste and judgment for the selection of best time, etc., and arrangement of moveable parts, figures, etc.

It is a matter of great regret, however, that many, far too many, photographers scoff and scorn the very existence of any such thing as a need for art study or education. The wisdom of eighteen centuries is unanimous in confirming the statement that although all things may be *possible*, yet they are not necessarily *expedient*. No great harm will be done if, taking a hint from this, we say all truth is not beautiful; that which is possible is not necessarily admissible or desirable.

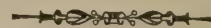
It may, with much truth, be said that there is but one law of composition, viz., the law of unity, *i.e.*, that all other laws are only means towards that end; so also, with equal truth, might it be said that the chief end and aim of composition is to secure complete and perfect harmony throughout the entire work.

Some little time ago there was a wave of fashion teaching us to borrow the terms of music for application to pictorial art, and bidding us talk of symphonies in green and gold, etc. Now, although much more may be urged in favour of some of these terms than many might suppose, yet it behoves us not to use them without being fairly clear as to what idea they shall imply. For instance, the term harmony is thus used in pictorial art to mean the effect of illuminating a scene with a more or less monochromatic light. The great beauty of this may often be seen at sunrise or sunset. Hence these effects are usually associated with a certain measure of poetic sentiment.

Again, the experienced general will frequently divide his forces and so plan his attack that it may be made simultaneous, but at different points; yet all in harmony and

guided by one master mind. So, also, will the skilful artist so plan his attack that we are carried away, not so much by any one part or feature, to the exclusion of all the rest, but rather by the united and combined appeal, made so harmoniously that we fail to perceive it to be composed of more than one great and guiding feature, and thus bringing our mind into sympathy and harmony with that of the worker.

It is certainly not over-stating the matter when we say that this subtle principle which we call harmony and which baffles definition or precise description, nevertheless is the most rare and the most precious quality of a work of art.



## Diversity in Art.

BY SENEX.

WE have, in a former paper, alluded to diversity in art. This is a subject which just now offers much material for consideration, and the more so as there is a direct conflict of ideas between those whose liberal taste and feeling recognise truth and beauty wherever they find it, and those who deny excellence unless it is looked at through a peculiar medium of their own choosing.

There is an oracular way of writing about art which is evidently very seductive to those who indulge in it. The effect intended is rather to startle than to convince the reader, to create a sensation in his mind, to put him off his balance and keep him there. And, unfortunately, there are many who are too far carried off their feet by this fancied monopoly of taste to think of examining the matter for themselves; or else they are only too glad to escape the study of a difficult subject by pinning their faith on those who tell them that there is no subject to study. What wonder that the student should come to the conclusion that perversity in art and diversity of art are the same thing?

The theories which endeavour to restrict and control art, and to make it independent of the effects produced by originality of imagination and feeling, naturally lead to all sorts of false and delusive conclusions, and to inconsistencies of argument which make one aghast to read them. For instance, we are told to admire the beauty of a Dutch picture, first of all for a reason which everybody will admit to be just, namely, its marvellous technical fidelity, and then because it depicts something that took place when the artist was alive. This second qualification is insisted on as decisively as the first, and a standard of taste set up which must not be infringed. What then must be said about pictures which do not conform to this standard? Something must be said about them. What is it to be? Let us take a mythological subject, "Venus and Adonis," by Titian. Judging from what we believe to be the true and genuine impression of things, we should have thought it sufficient to find here a perfection of form and colour, a power of generalising and individualising, a softness and delicacy of outline, the richest contrasts and most subtle gradations of colour, all giving the highest distinction to the story. No, says the critic, this is not excellence at all. If it gives pleasure it is a false pleasure. Titian never saw Venus and Adonis, and therefore the merit of the picture belongs to another man!

Let us look at this wonderful argument for a moment, and push it home to its legitimate corollary. Shakespeare is generally supposed to have adorned and transformed every subject that he touched, and to have given to it a lustre that time will never dim. Nothing of the kind. Shakespeare's plays were all taken from Plutarch's Lives, Holinshed's Chronicles, Italian stories, etc. Therefore, all the credit of them belongs to another man. Tennyson, when



he wrote "Enone," probably imagined himself quite innocent of literary theft; at any rate, those who read the poem find in it a sublimity, a truly religious and wise philosophy, which seems to proceed from the poet's own mind entirely. Nothing of the kind. The credit of it all belongs to another man. And so on *ad infinitum*, wherever an idea has been ennobled, whether in poetry or picture, by originality, imagination, and power.

What we complain of in this kind of criticism is its want of any defined principle except of the narrowest and sourest kind. Nothing is seen in a picture but the execution. There is no key given us to unlock any other beauties of any other kind. Execution is the only beauty. We are told to admire the *beauty* of Van Eyck's picture of the merchant and his wife, in the National Gallery. Well, we yield to none in admiration of the painstaking and laborious finish of this wonderful picture. But in our desire to acknowledge the excellencies of all original genius, we find it impossible to pretend to find qualities that do not exist. If one of the tests of beauty in art is found to be when it combines fidelity of imitation with refinement of character and expression, it is not to be seen in Van Eyck's picture. The figure of the woman is essentially vulgar, and not only that, but intentionally so; and the man's figure, to say nothing of its grotesque appearance, is equally vulgar. Here truth and beauty are *not* united, and before this mere mechanical power can be raised to the rank of the beautiful, it must cease to consist in and depend upon any one excellence to the exclusion of the rest.

When the pre-Raphaelites in 1848 broke out into open rebellion against their *alma mater*, the Royal Academy, it was to enter their protest against a method of teaching which had entirely strayed away from and forgotten nature. This system consisted in producing pictures from art studies, and continually copying and conventionalising other men's ideas without reference to nature in their compositions. Mere imitation of existing models and adherence to prescribed rules was supposed to result in qualities superior to the cultivation of natural powers.

It was the motive, not the actual drawing of the painters who preceded Raphael, that the pre-Raphaelites strove to emulate and attain to—the simple return to the study of nature, instead of the copying of somebody else's ideas of nature. And in this they were perfectly right. It was only to be expected that men who had so unceremoniously cut themselves adrift from time-honoured methods and maxims which quenched everything in the shape of originality, and who had nothing but their own natural powers, and whatever bent of original genius they might possess to guide them and trust to, should have floundered a good deal in their desire to be rigidly right, and should have neglected the refinements of art for the literalness of it. But when Millais' Huguenot girl appeared, all doubts as to the wisdom of, and the necessity for, the schism were set at rest. For in the fidelity to nature, combined with the exquisite melting pathos of that appealing face, truth and beauty were united.

This, then, is what the student, in his search for diversity in art, has to seek—the union of truth and beauty. It is a simple test; it is as old as the hills, and quite as beautiful.

All great changes in art have been of the character we have just described, and have sprung from an unconquerable desire to see and think for yourself, and a determination to cease borrowing for ever; to abandon the mere imitations of style and conventional models, and to strike out a separate path independent and original; to get away from the powers that be, and to unfold new ones of one's own, whose principles should be in the individual mind freed

from the clutch of custom. Such men soon learn to see things in nature that their teachers have missed altogether, because they looked in the wrong place for them, or only through the medium of obstinate prejudice.

In painting, as well as in architecture, there are no laws applicable to all works and all countries; the tendencies and the means of execution are different according to the schools. The value of the study of this diversity consists in this, that it enables us to discover how the various interpretations of nature arose, and what they were. Not that these great men found anything new in nature, but that they saw it as no one had seen it before, leaving to us, at this distant day, the priceless legacy of a new intuition.

Conscious of beauty, let the student in art seek and analyse its source, that he may not pretend to find it where not even the artist suggested it. Conscious of defects, let him be wisely tolerant of them, that he may not miss excellencies. For

The fault, dear Brutus, is not in our stars,  
But in ourselves, that we are underlings.



## Notes on Perspective Drawing and Vision.\*

By DR. P. H. EMERSON AND T. F. GOODALL.

SOME years ago we made some experiments with the object of comparing a monocular perspective drawing with the drawing of an aplanatic photographic lens. We found that under similar conditions they were alike, as was, of course, *a priori*, probable. More than a year ago one of us published a short paper with an experiment, which threw grave doubt upon the truth of perspective drawing when compared with what the eye really sees.

We now offer a series of provisional propositions, experiments, proofs, and deductions, which we venture to think are of fundamental importance to all artists, as well as to physiologists and psychologists. We are working now to still further elucidate the matter, but we decided to publish the following notes, so that specialists might perhaps help us in the matter.

Our experiments and deductions, if correct, will show that for scientific reasons the accepted rules of monocular perspective are likely to mislead the artist, and prove the fallacy of photographic and all mechanical methods of measurement.

*Proposition A.*—The eye does not constitute a symmetrical lens,† the top and bottom portions being different. That portion of the eye which perceives distance and distant objects (*i.e.*, those above the ground), sees the objects on a larger scale than the portion of the eye which views the foreground or nearer objects, therefore our impression of nature is not what we get with a mathematically correct perspective drawing, or the drawing of an aplanatic photographic lens. That is, a perspective drawing surprises us by making the foreground objects look larger in proportion to the distance. Also we see a larger arc with the lower half of the eye than the upper.

*Proof 1.*—That we do not see the same amount with both halves of the eye (upper and lower) is proved by the observer lying on his back and looking straight up at the sky, when he will find that the field of vision of the upper half is much more limited than the space seen by the lower half of the eye. This holds for either one eye alone, or for both when used together.

The proof is completed when we stand with our legs apart, and standing with our back to the landscape, bend down and look between our legs. Here the fields are inverted, and consequently the distance appears small and far off, and gives much more the appearance of a sharp photographic rendering of the

\* When we use the term "perspective drawing," we mean a mathematical drawing of various objects in the field of vision (*i.e.*, angular measurements), as received on a glass plate (ordinary perspective drawing) or upon the screen of a camera, for, under like conditions, they are, as is well known, identical.

† We have ignored for the sake of simplicity the optical law of inversion of the image on the retina; when that is considered, the terms "upper" and "lower" must be merely interchanged.



scene. This peculiar effect has long been well known, and it has puzzled a good many observers, but hitherto no valid scientific explanation has been offered.

*Proposition B.*—We think this may be the result of the naturally selective action of the retinal nerves. It has been to our advantage in the struggle for life to see all the objects near to us and close around clearly, and to compass as wide a field as possible. It has also been to our advantage in the struggle for life for certain parts of nerves to try and draw distant objects nearer and to enlarge them, so that special functions may have developed purely by natural selection.

*Deduction 1.*—That mathematical perspective drawing gives quite a false impression of what we see when using *either one of our eyes or both*.

That such is actually the case we will now endeavour to prove, at the same time still further supporting our contention that the upper and lower portions of the eye see objects in different perspectives.

*Proof 1.*—Let the observer select a church tower or tall chimney for experiment. If the sides are parallel, the object will *appear* to his eye wider at the top than at the bottom when he stands facing it at the distance of the tower itself, and looks steadily at its centre. These experiments are best made in the diffused light of evening. The experimenter must not move his eyes up and down the tower from top to bottom, and so *measure or correct* his impressions, but he must look steadily at the centre of the tower and take his pure sensuous impressions. As most towers and chimneys do taper considerably, the result the observer gets when close to them is that they *look parallel*, or nearly so. This fact was, no doubt, felt by the architects of the Parthenon, and it has never been known why they built the columns leaning inwards, a little out of the perpendicular. That they were built out of the plumb has been proved by measurement; that they *look parallel* is well known, and the reason of this we venture to find in our proposition.

*Proof 2.*—A very simple proof is to look about the middle of a doorway or door; it will be felt that the door or doorway is wider at the top than the bottom. The same holds with books in a book-case.

*Proof 3.*—Cut two slips of paper: (a) 8 inches long by 2 inches wide; (b) 8 inches long by 2 inches by  $1\frac{1}{2}$  inches wide, so that it tapers  $\frac{1}{2}$  of an inch. If the parallel slip (a) be held upright 8 inches from the eye (its own length), and looked at straight in the centre—the centre of the paper being opposite to the eye—the paper will appear slightly wider at the top than at the bottom, the same proviso of not correcting the pure impression by measurement (looking up and down it) holding, as we pointed out in the case of the church tower. If the observer now takes the tapering slip (b) and holds it narrow end upwards, looking at it in the same way, it will *appear parallel*; if he holds it wide end upwards, it will appear much wider at the top than at the bottom. This holds equally true if the experiments are made either with one eye or both, showing that binocular vision has no effect on the impressions.

*Proof 4.*—Another interesting experiment is to place a penny upright on a table, and a halfpenny 18 inches behind it and a little to the right or left of the penny. The eye must look *over* the penny at the halfpenny, so that the penny is a foreground object and the halfpenny a distant object. If the observer now looks steadily at the halfpenny, at the same time seeing the penny, he will find the impression given is that the halfpenny looks nearly as large as the penny.

Proposition A and proofs deal mainly with what we would describe as *vertical vision*—that is, with the variations in the appearances of objects when placed one over the other, as in a vertical column, or with objects at a distance as compared with objects in the foreground.

But within the radius where binocular vision acts (calculated by Mr. T. R. Dallmeyer to be sixty yards), new and important variations occur. These properties we shall consider under the term of horizontal vision.

*Proposition.*—Within the limits where binocular vision effective—say normal vision (8 inches) to 60 yards—objects *appear smaller when they are compared with objects beyond their binocular limit*; that is, they appear smaller as compared with drawings as given by monocular or mathematical perspective.

An experiment to practically bring the effect of the binocular vision variations entering into the matter may be made as follows:—Take the tapering slip of paper aforesaid (b), and

place it between the two eyes, the wide end resting upon the bridge of the nose, the slip being inclined at angle of 30 degs. with the horizon. The result is that the paper vanishes *towards* the eyes—diametrically an opposite result to what perspective would lead us to expect. This phenomenon still holds if the paper be gradually moved away from the eyes, and held at arm's length, but in the same plane.

*Proof.*—Place a book at a distance of six feet from the eyes. Then proceed to measure the width of the book with a pencil (one eye being closed), as a draughtsman draws objects by monocular perspective, and then open the other eye, and measure the width of the book with both eyes; the binocular measurement will be found to be smaller than the monocular measurement. If the height of the book be measured in the same way, there will be no difference in the result obtained with one or both eyes.

But more convincing is Proof 2. Wafer a square sheet of white paper (say 8 inches square) on the wall, or on a window six feet from the observer, and look at it. The impression given will be that it is larger vertically than it is horizontally. This explains the old trick of marking off the height of a tall hat against a wall; as a rule, everybody places the mark too high—the reason is now explained.

Still another proof. Stand a halfpenny and penny on the table, as directed in the previous experiment. Now place the eyes on the same level as the plane of the table and observe. The result will be exactly the reverse to that previously obtained. That is, when looking directly at the halfpenny, at the same time looking (indirectly) at the penny, the penny will appear the larger, and *vice versa*, when looking directly at the penny and indirectly at the halfpenny, the halfpenny will appear nearly as large as the penny.

Another every-day proof. Let a person sit in one end of a long punt with parallel sides, and look at the other end; it will look to him to be wider than where he is, and yet its sides will by perspective laws vanish quickly away from him.

These proofs show the effect of binocular vision, which is to increase the appearance of height and to narrow the appearance of breadth; consequently, it makes objects appear taller than a perspective drawing would do.

*Deduction.*—The reason we get a different impression of relative sizes of objects by normal vision from that given by mathematical perspective drawings and photographs is, that the combination of these properties of vertical and horizontal visions gives quite a different result to that of perspective drawings.

*Final.*—Having shown how we see forms, it only remains to say that a mathematical perspective drawing, or the drawing of an aplanatic photographic lens, does not give forms as we see them. They are altogether false to the visual impression of the proportions of things, and therefore give a wrong idea of the original scene. On the other hand, a perspective drawing or correct photograph gives the *actual facts* scientifically, *i.e.*, the pillars of the temple as leaning, the paper in experiment as *square*. All such drawings are, therefore, purely scientific diagrams, and artists who wish to render what they see must not rely upon them.



## Photography and Fiction.

### AN ALARMING DISCOVERY.

As a nervous amateur who has spoilt more negatives through uncapping the lens at the wrong moment, dropping the plate in taking it from the camera, and discovering the dark-room door only partially closed when half way through the development, than any other living person, I don't mind saying that a recent *feuilleton* in a certain evening paper has given me an uncomfortable shock. I am one of those (there are very few of us left) who believe in spiritualistic photographs, and I don't mind saying that the picture which interested me most in the Pall Mall Exhibition of 1889 was the portrait of the late Madame Blavatsky. You can, from these hints, understand my predilections.

I know pretty well what wonderful things romance writers have made photography do. The list of wonders started pretty well with Mr. Boucicault's "Octoroon," where a coloured gentleman, looking at a dark-slide, saw through the back and developed the plate inside with his eye, thus providentially discovering a murder. Mr. Richard Dowling, I think it was, some years after this



succeeded in taking an instantaneous photograph, in the dark, of a murderer, the lens having fortunately been left uncapped. Miss May Ostlere photographed a supposed dead body, and found out the body was not dead, as it moved.

All these stories and a good many more have not affected me. I knew they could not be true. It has been left for the *feuilleton* already mentioned, to make me thoroughly uncomfortable.

Upon reading this production it instantly occurred to me that I may, unconsciously, have caused my friends intolerable anguish. I was aware their prevailing expression, in my attempts to photograph them, was either one of mental incapacity or unutterable woe, but this is not what I mean. If the writer's theory be true, I may have given them many an attack of neuralgia, or some other agonising ailment. Indeed, I may have gone further, and committed unintentional homicide. Naturally, this has worried me a good deal, and I hasten to lay the case before you.

The writer of the *feuilleton* tells us how a man with a pair of dreadfully mysterious eyes falls in love with the daughter of a wealthy man. The wealthy man objects, whereupon the person with the eyes takes his departure. As he leaves the house the writer sees him receive a cabinet photograph from one of the servants in return for "handful of gold." The photograph is a portrait of the girl with whom the writer is in love. The latter is enraged, and insists upon the person with the eyes handing him the photograph. The person seizes the wrist of the writer and drags him to his laboratory. There amid "all the grinning apparatuses of necromancy the visitor sees "a number of small wax figures with human faces, with needles in the shape of swords stuck into their hearts;" in fact, the paraphernalia of the old witchcraft business.

But necromancy has moved with the times, and the person with the eyes has been able to improve the process by substituting photography for wax. He intends to kill Camille—that is, the girl—but, to quote his words, "I shall not have occasion to make an image, and infuse therein from my own vitality a factitious life, for I am in possession of her life, of a portion of her own vitality, in this," and he brandished the portrait above his head.

This seemed to me to be perfectly reasonable, because according to the Blavatskyan theory you can be in two places at once. I know that priority in this kind of dual personality has been claimed for Sir Boyle Roche and his famous bird, but credit is none the less due to the Theosophists for having revived the idea. Therefore it is quite feasible that a girl should be herself in the flesh and herself in her photograph, unless, of course, the negative has been retouched, when she might well be somebody else.

Being convinced of the truth of this theory, I read the person's explanation with much interest. He says, "Between the body which is placed before the object glass and the sensitive plate, a current is established which takes from the living being, as in a galvanic plastic operation, innumerable particles of its proper substance and life. Chemistry fixes them, nothing more, and between this reproduction and the living being there exists a bond that nothing can sever. There are between them innumerable threads like a system of electric wires, and when I strike or touch these threads of communication they telegraph, and the action is introduced on the living being, who cannot understand why she suffers, sighs, or dies."

This is beautiful, I thought, and then I went on to read how the person with the eyes, drawing a dagger, stabbed the photograph, and that the next morning Camille was found dead. I must confess the whole force of this admirable idea did not burst upon me all at once. When it did I was made, as I have already said, intensely uncomfortable.

I began to ponder over the consequences of this the latest discovery in photography. If, I thought, the vitality of a young lady can be distributed over as many silver prints as she likes to order, how much more vitality must there be in the negative. I had a lurking hope that this "bond" did not exist in every case, but who is to tell, and how, when it does and when it does not?

Anyway, the result of my cogitations has turned my dark-room into a torture chamber. I am certain whenever anything goes wrong with the development, say when the film slips off and disappears into the sink, I shall not be happy until I know I have not also annihilated the original. A week ago I took my friend Smith's portrait, and yesterday the negative cracked in the printing frame. I at once wired to Smith to know whether he too had not had a stroke of some kind, and you cannot imagine what a relief it was when he wired back to know if I was an

idiot. Although I cannot absolutely say that up to the present I have murdered anybody, the deed may happen at any moment. I really feel inclined to give up photography altogether. It is so horrible to think, when I am dipping a plate into the alum bath, the original may have a sort of "gooseflesh" feeling go over his frame as though his skin were shrinking. Who can say while the mounted print is going through the rolling press, my dearest friend may not be agonised with twinges of the gout? I am convinced there is something in the theory, for by accident an albumenised print was left in the washing apparatus all night, and the next thing I heard was that the sitter whose likeness it represented was suffering from influenza. If there is not cause and effect here, I should like to know where they are to be found. I do hope some of the societies will investigate this subject, if only for the sake of any one who may be, like myself, A NERVOUS PHOTOGRAPHER.



## Holiday Resorts and Photographic Haunts.

### ROUND ABOUT JERSEY WITH A CAMERA.

BY J. ANDREWS.

THERE are few more delightful places for a holiday run than the Channel Islands, and to the man weary with town life nothing can be more charming and invigorating than the thorough change of scene, with fresh air, sea breezes, blue seas, green lanes, and rocky bays, which these islands afford. The following remarks will, however, be confined to the island of Jersey, chiefly from a photographer's point of view, as inquiries are continually being made in the photographic papers as to its capabilities for a photographic tour:—

The island of Jersey, the largest of the group, is 133 miles from Southampton and 93 miles from Weymouth, and is within 15 miles of the coast of France, whose white sands may be distinctly seen in clear weather. The most convenient route for Londoners is via Waterloo and Southampton. The mail train leaves London every evening, except Sunday, at 9.45 p.m., and runs alongside the boat at Southampton.

The boats, which are new and very fast, leave at 12 midnight, and are timed to reach Guernsey about 6 a.m., and Jersey at 8 a.m. The fares are moderate: 1st class return, two months, £2 8s.; 2nd class, £1 13s. Travellers from the west of England will probably find the Weymouth route more convenient, and the boats are equally fast and good; the fares are the same as the Southampton boats, but the sea passage is about two hours' shorter. These boats leave Weymouth every morning, except Monday, at 2.30 a.m., and arrive about the same time as the South-Western boats. There is also a boat several times a week from Plymouth direct. In the summer the sea passage is delightful; but in the winter sometimes much delay is occasioned by fogs and gales, but this will not matter to the photographer, as then he will, most probably, be comfortably at home preparing lantern slides.

The approach to Jersey on a fine morning is very beautiful; after leaving Guernsey, and rounding the Corbière lighthouse, the bay of St. Aubins lies before us on the left with villas and terraced gardens, and the town and harbour of St. Heliers will be quickly reached if the tide is favourable. At low tide the passengers are landed in open boats. This is a great inconvenience, especially to invalids.

The photographer must not expect very grand scenery in Jersey, as there are no mountains and no river or lake, but the valleys are very picturesque, and the rocky bays lovely. Beautiful subjects will also be found in the old lanes, but as a rule the trees are not very large, and in many places have been ruthlessly cut down and topped by the farmers, who are entirely devoted to the cultivation of early potatoes. It is much to be regretted that many of the old orchards have thus been destroyed. The island consists nearly entirely of granite and porphyry, and in some places this is overlaid with a slaty schist.

At the west of the island there are large tracks of sandy dunes which have swallowed up many acres of land, and may be still seen advancing in some parts of St. Ouen's bay.

On the east at low tide will be seen great spaces of rocks and pools, whence *vraie*, or "the harvest of the sea," is largely gathered and forms a most valuable manure.



Some admirable subjects may be obtained when this harvest is going on, with rustic figures and carts. The main roads are good and well kept, and the photographic bicyclist will find every accommodation in the way of repairs, etc., in St. Heliers should he unfortunately come to grief. The climate of Jersey is, as a rule, very mild, especially in the winter; snow seldom lies long, and hard frosts are comparatively rare. Last winter, however, was an exception, and the long continued frost has killed all the outdoor geraniums and many other plants which usually flourish here all the year round; the myrtles, the enormous lemon plants, and other shrubs have also suffered severely. In the spring the winds from the north and the east are cold and last till May, but the summer and autumn are beautiful, day after day of cloudless weather succeed each other, and it is seldom too hot, as the heat of the southern sun is tempered by the sea breezes. The actinic power of the sun is very great, much more so than in England, and the photographer will find that slow plates are sufficiently rapid even for snap shots.

We will now suppose our visitor to have escaped the perils of the deep and the clutches of the boatmen and touts on the pier, and to have reached the town of St. Heliers in safety. Here he will find ample choice of hotels, for description of which we must refer him to his Black or Murray. Some of them are very well situated, but a large hotel is being rapidly finished on the Parade, facing the sea, which in point of situation will certainly surpass everything else in St. Heliers. Charges are moderate, and by arrangement visitors can be boarded at about 8s. a day. Seaside lodgings are not very plentiful in the season, but the charges are reasonable; the only seaside lodgings will be found at Havre des Pas, which is a very pleasant suburb. There are also quiet country hotels at Bouley Bay, Rozel, Pontac, and St. Aubins, which is a most picturesque village about five miles from St. Heliers, and here will be found good hotels and excellent lodgings; there is no prettier place than St. Aubins for a quiet stay. St. Heliers is a large town containing some 30,000 inhabitants, the streets are narrow, but the shops are good, and all the necessities of life and a great deal more can be obtained at moderate prices. The visitor should especially notice the harbour, where some good shipping subjects can be secured; the old square, and the memorable scene of Jersey's great battle in 1781, and the spot where "Pierson fell." There is a very fine public library, and the Royal Courts and new States room are worth inspecting. There are a few good street subjects in St. Heliers, but otherwise there is not much to detain the photographer. The parish church is not very interesting, though very old; in fact, there is nothing in the way of architecture in the island, except the ruins of Mont Orgueil Castle, of any importance.

A fine subject or two may be obtained of Elizabeth Castle, especially at low tide at sunset. This old castle has an interesting history. It was here that Charles II. found an asylum, and here Lord Clarendon wrote his history of the Rebellion. A very interesting account of Charles's stay here will be found in Dr. Hoskyns' valuable work, which is compiled from original sources.

The town of St. Heliers is clean and cheerful, and there are many good villas in its environs. The visitor will also find a public park, lawn-tennis ground, a theatre, and many other attractions. There are also several clubs to which strangers properly introduced are readily admitted. There is a capital circulating library, the bathing is good, and there is no duty on tea or tobacco. What more can anyone require? The photographer will say, "How about a dark-room?" Well, Mr. De Faye, photographic chemist, David's Place, can accommodate him in this respect for a small charge, and he also supplies plates of several makers, and other photographic requirements. Jersey also boasts an amateur photographic society (at No. 21, Grove Place), which holds monthly meetings, and arranges excursions during the season. Visitors introduced by any member will be gladly welcomed by the society to their meetings or excursions; the Secretary is Mr. F. W. Toms, 21, Grove Place.

In the season, numerous excursion cars run to all parts of the island, but the photographer will, we think, rather avoid these if he wishes to do good work. There are two short railways—one to Gorey in the east, and the other to St. Aubins and the Corbière in the west; trains run frequently.

The first excursion we propose to the visitor will be to Mont Orgueil Castle, which is easily reached by the Eastern Railway in about half an hour. After leaving St. Heliers the line runs

along the coast, and many pleasant glimpses of old orchards and pastoral scenery will be observed. After passing Grouville, where there is a large common devoted to golf and rifle shooting, the village of Gorey is soon reached. Gorey is an old-world place, and looks in a decaying condition, partly owing to the failure of the oyster beds, which some years ago were most prolific; and we have heard old inhabitants declare that the harbour in those days was crowded with boats, and that the fishery employed upwards of 2,000 persons. It is quiet enough now, but still the old castle rises proudly over the town. It is a grand ruin, and has a most interesting story, full particulars of which will be found in Messrs. Latham and Ansted's volume.

The photographer will find many good subjects here. The best general views are from the end of the pier and also from a sandy bay in the east. The old gateways and the courtyard are also well worth taking, and there are many good bits of old masonry. One or two days may be well spent here, and the visitor should by no means omit to ascend to the top of the tower, where a grand view is to be obtained of a large portion of the island and the white shores of France, and on a clear day the Cathedral of Coutances may be distinctly seen. There is a pleasant walk or drive from Gorey round the coast to Rosal Harbour and Bouley Bay, and some good coast and rock subjects may be secured *en route*. In returning to St. Heliers from Bouley Bay, the pedestrian should avoid the high road and keep to the valley, down which runs a little stream. This route passes through some lovely old lanes and by some pretty cottages. Another good day may be spent at Greve-de-Lecq on the north coast, and the most pleasant way is to drive or walk through St. Peter's Valley, past St. Mary's Church. If the pedestrian takes the Western Railway as far as Millbrook, he will find it a most delightful walk to Greve-de-Lecq. There are many other beautiful valleys, some of which have good mill subjects; the only way is to explore on foot the Val des Vaux, near St. Heliers. The Waterworks Valley, starting from Millbrook, and others will all afford good subjects. From Greve-de-Lecq the coast both ways may be explored, and fine rock subjects will be met with at Plemon; in fact, the whole of the north coast is very rocky and grand. The visitor should take particular notice of the state of the tide, as in some places it rises thirty and forty feet, and many accidents have occurred to incautious travellers.

Another day may be spent at the Corbière Rocks and Lighthouse. The railway runs first to St. Aubins, which is a very picturesque village, and here some good street subjects may be secured. The railway then runs up a very picturesque valley to Don Bridge and the Corbière.

This part of the island consists largely of blown sand, and the district known as the Quenvais is well worth exploring. If the train is left at Don Bridge, a charming walk to St. Ouen's Bay can be taken leaving the rifle butts on the left. In many places the advance of the sand can be observed, and the botanist will find many interesting plants in this district. In early summer in many places the ground is covered with the burnet rose, sea stock, sea holly, and sea poppy, and other plants. St. Ouen's is a magnificent bay, facing the Atlantic, and all this part of the island is wild and suggestive of nature.

At the Corbière lighthouse are some fine rock subjects, but they should be taken early in the day, as they face the west. Returning from the Corbière, the visitor should not omit Beau Port, where some grand rocky pinnacles are to be seen, in some places covered with ivy. A short walk from here will bring us to St. Brelade's Church, the oldest in the island. It is really a beautiful spot, and the church and churchyard are well kept. At St. Brelade's there is a good inn, where weary photographers will find very good accommodation. From here a short walk up a lovely valley will bring us to Don Bridge, where the train will soon take us back to St. Heliers, or the road over the hill to St. Aubins can be taken.

There are many other interesting spots which the visitor should inspect, such as L'Etac at the extreme north-west, where there is a fine pinnacle of rock standing out from the cliff. The Creux de Vis and Bonne Nuit Bay on the north will also repay a visit, and good subjects are to be met with at most of these places.

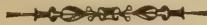
Independently of photography, the intelligent visitor will find much to interest him in Jersey, whether he be a geologist or botanist or collector of sea-weeds and marine fauna. The old laws and customs of the island are of great interest to the student and the politician can here see Home Rule in actual and success



ful operation. He will not, however, meet with poverty or noisy demonstrations, for the natives of Jersey are a hard-working, prosperous people, and though they dearly prize their own laws and institutions, are thoroughly loyal to the Crown, and the Queen is perhaps dearer to them as the Duchess of Normandy than as Queen of England.

At the time of the potato harvest, in May and June, large numbers of peasants come over from Normandy and Brittany, and some good figure subjects may be obtained; the blue dress and white sleeves and caps of the women are exceedingly picturesque. Lastly we must say a good word for the Jersey cows, which, though they are quiet and gentle creatures, are always tethered; they give the best of milk, and form very admirable adjuncts to the landscape.

The expense of a fortnight in Jersey, including railway and steamboat fares, should not exceed £10, and with economy it may be done for somewhat less. There is a boat every day to Guernsey, and in the season excursions can easily be made to Sark and the adjacent islands.



## The Picture Galleries.

### DUDLEY GALLERY SUMMER EXHIBITION.

By "LOITERER."

At the Egyptian Hall, the Dudley Gallery Art Society is now holding its annual exhibition of water-colours. The encouragement which this society gives to youthful artists cannot fail to be of advantage, although, naturally, certain of the pictures on the walls may truthfully be termed, in the language of Mr. Steerforth's waiting-man, "Young, sir, very young." Taking the pictures in succession, Miss Constance Duke sends a pretty little subject (7) to which a poem by Miss Sarah Doudney forms a title. A clever portrait (26) is sent by Mr. Alfred Tidey. Both "Lallah" (34) and "After the Festival" (43) show skill in flesh-tints on the part of Mr. Edward Tayler. Close to Mr. F. G. Coleridge's admirable view of "Eton College" (39), we find an excellent picture by Mr. Walter Severn of "A Sandy 'Bunker' on the Conway Rinks" (40). The flowers shown by Miss Lucy Varley (41) have a calico appearance. "The Storm Cloud" (47) exhibited by Mr. G. Cockram is very fine. Mr. R. Wane sends an effective picture of "Spanish Head" (60). A clever specimen of impressionistic painting is Mr. H. Goodwin's "A November Moon-rise" (66). Mr. R. A. K. Marshall has a careful piece of work in "An Old Oak" (73). Miss Helen O'Hara, as usual, is worth notice. Her picture of "Morning near the Giant's Causeway" (77) is remarkably natural. "Our Drawing Room" (98) is absolutely mournful. If it exists, why paint a picture of such a room? Another good picture by Mr. H. Goodwin is "Afterglow on the Simplan" (115), which will recall pleasant memories to Alpine visitors. Mr. Albert Goodwin's "Venetian Butterflies Sunning their Wings" (119) is extremely pretty. Miss Morgan's "New Year Ghosts" (123) is suggestive of naval manœuvres in a fog. A wide landscape, brightened by "Gorse in Full Blossom, near Conway" (140), shows Mr. Severn at his best. One can hardly resist smiling at Mr. Terry's "Old Farm Hand" (147), who is decidedly in his "Sunday best." Menta's "Modiste" (166) is clever, and Miss Carlisle's "La Pensatrice" (176) shows careful study. Mr. A. Webb narrowly misses a great success in his picture "When Morning Gilds the Skies" (196). Miss Sarah James has a pretty little sketch "Hesitation" (200). "Lambeth Palace" (209) is good work by Mr. Fred Burgess. An ambitious and admirable picture by Mr. R. A. K. Marshall is "Byways near Abergavenny" (226). Miss Peel's "Petworth" (238) seems lacking in perspective, but is otherwise good. "Grey Boulder and Black Tarn" (252) shows Mr. Percy Dixon to advantage. Two *genre* pictures by Mr. L. Block are extraordinary in clever detail (258, 309). Mr. B. J. M. Donne sends a careful sketch, "On the Marcime of the Miage Glacier" (264). That excellent artist, Mr. L. R. O'Brien, has an interesting subject on "Mont-tuorence Falls" (281). Mr. G. Marks deserves praise for "In the Gloaming" (353), as does Mr. H. N. Steane for "Break, break, break" (403). "From Killiney Hill" (426) is a good landscape by Mr. A. B. Wynne. There are many poor pictures in the exhibition, but also many specimens of good work by promising artists who are rapidly progressing in their profession.

## Apparatus.

### THE "EVER-READY" DARK-ROOM.

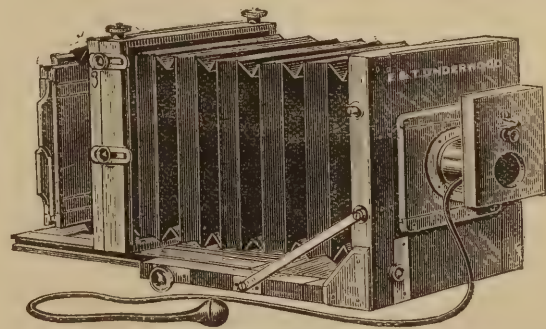
WE have recently had the pleasure of examining one of these ingenious dark-rooms manufactured by Messrs. Davenport and Co., of 32, Parkhouse Street, Camberwell, S.E., an illustration of which will be found in our advertisement columns, and we were astonished. The room is 6 ft. 6 in. high, 3 ft. 6 in. wide, and 3 ft. deep, which gives ample room for working without any fear of barking one's elbows. Shelves are provided for bottles, chemicals, and so on, while the developing table is provided with a lead-lined sink, 12 in. by 9 in. by 2 in. deep, with a pipe for waste which can either be discharged outside the dark-room or into a bucket below the sink. Just over the sink is a sliding coloured window which gives ample light in the daytime, and there is a bracket placed outside to carry a lamp at night. This arrangement will be found very convenient for bromide printing, as the window can be pushed aside, the exposure made, the window closed again, and development proceeded with. The four sides of the room, the roof, and the floor are separate, but holes are bored for the screws, and the whole is easily put together. Of course, at the price of 35s it is not to be expected that the room would be painted, it is supplied in planed wood, but any amateur could paint it for himself in an hour. The wonder is how it can be supplied at all for the money, and we hope the makers will have a large sale to repay them for their enterprise. A somewhat superior article, lined with light-tight felt, and fitted with lock and key, is supplied at £2 2s.

### MESSRS. UNDERWOOD'S LONDON DEPOT.

These well-known makers of photographic apparatus have just made an arrangement with Mr. D. R. Duncan, of 186, Fleet St., to become their London agent, and he has on show a good stock of apparatus, including cameras, tripods, lenses, shutters, and so on, which will be found well worth a visit by the intending purchaser. We may mention that all the apparatus sold by Messrs. Underwood is manufactured on their own premises, under their own supervision, and at the present moment they are as busy as they can be. Messrs. Underwood's views of the way business should be done are interesting. They say:—

"We beg to notify that our prices are nett, and that we do not supply our goods to dealers who advertise everything and everybody's goods at discounts. Our prices are very low for the quality supplied, and our trade discount is only sufficient to repay responsible and trustworthy dealers. Trusting that we shall prevent amateurs from being imposed upon..."

One of the standard patterns of camera supplied by the firm is the "Instanto," which, they say, has in it all the movements and conveniences which an operator can desire, either for home,



THE INSTANTO.

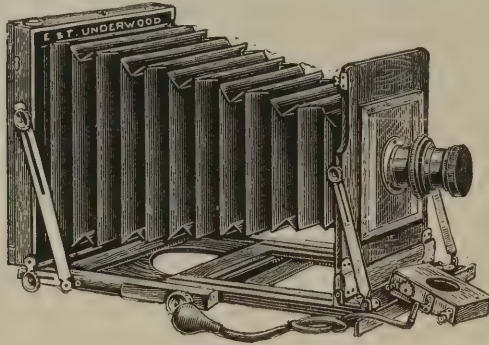
studio, or travelling. In it perfect rigidity is combined with the utmost simplicity and portability, loose parts or loose screws being rigidly excluded. The camera has leather bellows, and allows the use of lenses from the shortest focus up to 17 ins. in the half-plate. The body is fixed instantly and rigidly at any part of the baseboard, the focussing being effected by rack and pinion motion of baseboard. It has rising and cross fronts, double swing back, and reversing back. This reversing back is one of the refinements of modern cameras, and has hitherto been confined to the most expensive sorts. By its means the focussing screen, which is provided with double-jointed hinges, can be instantly changed from upright to horizontal, or *vice versa*. The



lens is a first-class achromatic meniscus of the most modern form of construction, and is especially adapted for instantaneous work. It is suitable for portraits, groups, views, etc., and for fineness of definition and covering power is not surpassed by any lenses made. It is fitted with an iris diaphragm, marked in accordance with the standards of the Photographic Society. The shutter is a new patent one, giving "instantaneous or time exposures at will."

An ash tripod, very rigid, is also provided as part of the set. The price for half-plate set is £4 4s.

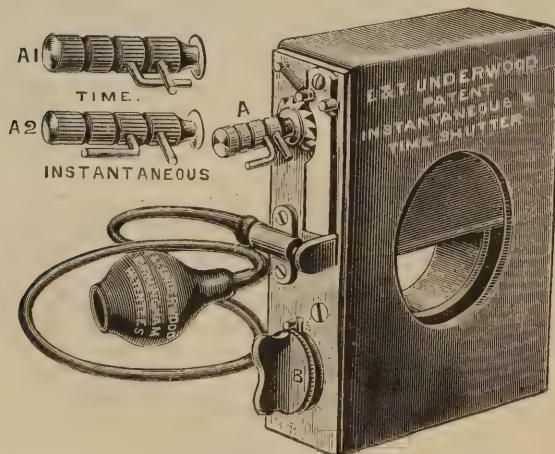
Another standard form is the "Exhibition," of which the makers say—"This model of camera is the most compact and portable it is possible to make. It permits the use of lenses from the



THE EXHIBITION.

shortest to the longest focus. The front is fixed instantly and rigidly at any part of the baseboard, the focussing being by rack and pinion. The back moves forward along the baseboard for use with very wide-angle lenses. It has leather billows, double swing back, swing front, rising and falling front with novel and superior tightening arrangement, double hinged focussing screen and reversing back, enabling the double back to be altered from vertical to horizontal, or vice versa, in an instant." The camera is fitted with a meniscus lens of good quality, and with the Instantolux shutter. The tripod head is a revolving one and is fixed to the camera, allowing the lens to come through when the camera is shut up. The price for a half-plate is £5 10s.

The "Instantolux" is Messrs. Underwood's well-known roller blind shutter, and is constructed to give either time or instantane-



THE INSTANTOLUX.

ous exposures, the action being very simple. It is a shutter which we can strongly recommend. The shutter is set ready for action by turning knob A round as far as it will go. It will only turn one way, the ratchet preventing it going the other way. For an instantaneous exposure the angle piece set in knob A is turned away from the shutter, as shown at A 2, and a firm pressure on the rubber ball given. For a time exposure the angle piece is turned the other way, as in A 1, and the pointer B set to the slowest. A pressure on the rubber ball being given, the shutter opens, and remains open, whether the rubber ball be pressed or loosed, and is only closed by another pressure of the rubber ball being given. The price for a shutter to fit a 2 in. hood is 18s.

Messrs. Underwood also manufacture several other cheaper but effective forms of shutter, and lenses of various kinds, which they claim to be of good quality and the best finish. They have also several forms of hand-cameras, which can be used with either plates, films, or a roll-holder. We strongly recommend anyone proposing to purchase a set of apparatus to pay a visit to Mr. Duncan before making his decision.

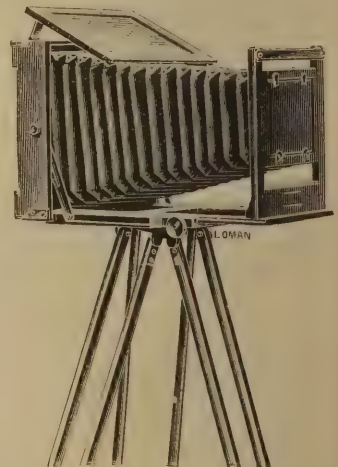
#### THE CLIFFORD CAMERA.

This hand-camera is the invention of Mr. C. Lawrence, of 141, Fulham Palace Road, London, W. The camera contains twelve plates, all of which can be brought into position and exposed in a few seconds. The plate-holder or sheaths are in the form of a book, in filling which you press the corner of plate against a spring until the end of the plate is in the sheath, when the spring will keep in its place. Having filled all the sheaths, "the book" is kept in position by a spring, which also keeps each plate as it is used in register. The action of changing plates is simplicity itself. Three kinds of books are made—one for twelve ordinary plates, one for twenty "Cyclist" plates, and yet another which will hold thirty cut films. These books all occupy the same space. The shutter is most efficient and beautifully made; it is wound up with a key, and is then capable of giving fifty exposures without any further attention. It will give a time exposure of any duration, from a quarter of a second and upwards. The speed of the shutter is stated to be one-fiftieth part of a second. The lens is of fixed focus, giving all things beyond 13 ft. sharp. The quarter-plate is sold for £10 12s., and 5 by 4 for £11 13s., fitted with Taylor, Taylor, and Hobson's D lens with Iris diaphragm.

#### LOMAN'S CAMERAS.

A few weeks since we called attention to the "Reflex" hand-camera made by Messrs. Loman and Co., of Amsterdam. We have within the last week had a call from Mr. Loman, and he has given us an opportunity of thoroughly examining the camera, which we must class excellent. Of course, the great feature in this hand-camera is in the fact that the *exact image thrown by the lens on to the sensitive plate is seen by the operator*. This is not done by any other camera in the market, and alone makes the "Reflex" the most serviceable to artists and others who want to make sure that the plate records the exact picture which the operator sees. These cameras are made in quarter and half plate size, and may be seen at Messrs. Mawson and Swan's London house, 33, Soho Square, W. They are of most excellent workmanship, and have a roller-blind shutter working directly in front of the plate, which will give a time or instantaneous exposure at will.

The firm are makers of all types of cameras, and their "Holland" camera brought out in January of this year will compare favourably with any of the first-class English cameras both in material and workmanship, whilst the price we understand is far lower. This is due to the fact that skilled labour in Holland is obtainable at one-third the price paid to the British workman. Two other cameras will be issued shortly, the "Amsterdam" and the "Stickum." Messrs. Loman and Co. have an ingenious shutter, the "Light Economic," which is on the roller-blind principle, but which works at the back of the camera immediately in front of the plate. It will, of course, be seen that the shutter cuts off no light whatever, and that the plate is exposed all over for the same period of time. This shutter can be fitted to any camera, but it is necessary to send the dark slide to Amsterdam. Other shutters, cameras, tripods, flash-light apparatus, etc., are made and sold by Messrs. Loman, who will be pleased to answer any enquiries,





either through their agents, or if addressed direct by post to Amsterdam.

### THE FRY MANUFACTURING COMPANY.

We recently had a call from Mr. Herbert S. Fry, we believe, the sole partner in this concern, and he mentioned that the firm was ready to meet any demand for cut films, and that pieces of celluloid for focussing screens were kept in stock. It is intended to give a series of lectures and demonstrations, commencing in the autumn and continuing weekly through the winter season. These are really started to teach the beginner; last season we understand there was a good attendance. We believe Messrs. Fry and Co. intend making a speciality of transparency plates on ground glass for stereoscopic work this season. It has often been remarked that if the *mat* of the ground glass were finer, they would be largely used. Those who have not visited the Company's premises at 5, Chandos Street, Strand, W.C., should take an early opportunity of doing so; if for no other purpose than to see the specimens of enlarging on bromide paper.

## Societies' Meetings.

**Bedford.**—The excursion to Sharnbrook on the 10th inst. was well attended, the party including two lady members. The weather was excellent and the pretty river scenery with which the neighbourhood abounds gave plenty of scope for the performance of good work. The President and one of the Secretaries conducted the party, and a very enjoyable afternoon was passed.

**Birkenhead.**—The usual monthly meeting of this association was held on the 11th inst., the President (Mr. G. E. Thompson) occupying the chair. Mr. Alexander Legg was unanimously elected a member. The President gave a paper entitled "Experientia Docet, or Photography in Italy;" this paper was the outcome of his several excursions to the country referred to, and was composed mainly of hints to those contemplating similar photographic trips. Mr. A. W. Beer referred to a recent photographic tour made by himself in company with Mr. J. H. Day in Brittany, during which the two gentlemen exposed between them two gross 10 by 8 films by various makers. Mr. Beer said that while the films were not recommended, even by the makers, for use in such large sizes without a roll-holder, still with the Barnett film-carriers, the results were perfectly satisfactory. As a result of their experience, they had come to the conclusion that while film photography was capable of great improvements, the great saving of weight made it well worthy of careful trial. Mr. Charles Sharp had been announced for a paper entitled "Authors and Artists at Play," but was unfortunately prevented by serious illness; his place was admirably filled, however, by Mr. Clibborn, who at a few hours' notice delivered a most interesting and amusing address on "American Social Life."

**Brighton.**—At the meeting on the 9th inst., Mr. Slingsby Roberts (President) in the chair, a number of members assembled to witness Mr. E. J. Bedford's practical demonstration of "Development by Eikonogen." This developer has undoubtedly many things in its favour, and has become very popular with photographers. Mr. Bedford exemplified the powers of eikonogen by developing bromide paper prints, lantern plates, and also ordinary negatives, good results being obtained in each instance. Mr. Roberts gave an account of the excursion to Bosham on Whit-Monday in conjunction with the Southsea Society. Owing to the inclement weather, the party was but a small one. Some good work, however, was done and a very enjoyable day spent. On June 11th an excursion was held to Danny Park. The next excursion will take place on the 27th inst. (in conjunction with the Lewes Society), when the members will, by kind permission of R. J. Streatfeild, Esq., be enabled to visit "The Rocks."

**Hackney.**—The ordinary meeting was held on the 11th inst., Mr. J. A. Sinclair, Vice-President, in the chair. Mr. J. O. Grant presented the society with twelve books, and was warmly thanked for his donation. Mr. Funston asked what strength should a hypo solution be used. Mr. Hubert said 20 per cent. for prints, but he rather liked a strong bath, though it bleached. Mr. Beckett advised putting a little gold in the bath for weak prints. The chairman liked the Alpha combined bath, as it seemed to bring out density. Messrs. Gosling and Roder showed negatives taken of the sun and the eclipse. From the question box: What is the best hand-camera about £5? The Ideal and Facile were recommended, but the latter was thought preferable by some. The Hon. Sec. advised the purchase of a camera in which dark backs were used, as there was then nothing to go wrong. Mr. Capel asked which were the best plates for a hand-camera? The chairman said that with very rapid plates density was not very easily obtainable. He liked Lumière's and Paget's, but in the former case it was necessary to use hydroquinone or eikonogen, as pyro ammonia did not seem to work well with

them. Mr. Beckett thought more sulphite would make them workable. Mr. McEntee then demonstrated the working of the air-brush. The great ease with which it is used and the results obtained ought to be seen by all photographers. Retouching provide enlargements, worked up, putting in clouds in pictures and on negatives are a few of its achievements. Mr. Herbert Smith then gave a very interesting paper on "Photography and Cycling." He made his paper practical by riding to the meeting place on his machine with a full photographic outfit. The machine he preferred and used was with the pneumatic tyre, a preventive of vibration. He carried his camera and sundries in a suspended arrangement in front of the steering bar. The only disadvantage he suffered from was dust. Mr. Hubert thought glycerine would overcome the difficulty. The chairman observed that there would be a danger of dampness. The excursion last Saturday to Box Hill was well attended, Mr. Hensler acting as leader.

**Harlesden and Willesden.**—The annual meeting of this society was held at the Court House on the 9th inst., the President in the chair. The following were re-elected officers for the coming year:—President, J. Naylor; Treasurer, L. R. Price; Secretary, Isaac Cohen; Council, Messrs. Seed, Clapton, Pay; new members of Council, Messrs. Hocking and Winterton. The Secretary read his annual report, which was of a satisfactory nature. Mr. Naylor read a paper, and practically illustrated it, upon "Exposure and Development," which showed great care in its preparation, and in which Mr. Naylor showed a simplified table of exposures he had made up for the benefit of members, and also gave the members the benefit of his experience about the formulae to use in development, and went thoroughly over the vast ground of his subject.

**Holborn Camera Club.**—A special general meeting of the members of the Club was held on Friday last, Mr. D. R. Lowe (Vice-President) in the chair, to elect a Secretary in the place of Mr. J. E. Smith, who had resigned membership of the club. Mr. Frederick J. Cobb, of 25, Lambeth Road, S.W., was elected to fill the post, and Mr. A. Plumbridge was elected a member of the Committee in the place of Mr. Cobb. The prize given by Mr. T. O. Dear, for the best picture taken at the picnic outing, last month, was awarded to Mr. A. J. Golding, who sent in a very pretty picture of an old cottage. Mr. A. Bell announced that he would give a prize for the best picture taken at the Purfleet outing, and the Chairman said he would also give one for the best picture taken at the London Colney outing on the 28th inst. Twenty-one members, including five ladies, journeyed down to Purfleet on Saturday last, and spent a very enjoyable day there. The members divided the plates in their slides between the annual fair, "botany," and the river (taking shots at some of the vessels outward bound).

**Ipswich.**—This Society, including a contingent of lady members, had a very enjoyable excursion to Coddanham on Saturday, the 13th inst. Plates were exposed on many of the picturesque nooks of this quaint village. The church, with the "Hall" family pew (an enclosed apartment containing a fire-place, etc.), was also visited. A move was afterwards made to Shrubland Park (kindly thrown open by Lord Saumarez), and on returning to Coddanham after tea, a few more negatives were secured, including the inevitable "group."

**Liverpool Camera Club.**—The monthly meeting was held on the 10th inst., the President, C. F. Webb, L.D.S., in the chair, who announced his intention to give two prizes for the best sets of six pictures taken during the monthly outings. Mr. G. Allday was elected a member of the Council, and Messrs. Glassey, E. Hawkins, Allday, W. A. Brown, and J. Hawkins each developed a plate with their own chemicals. Nineteen members were present out of a membership of over thirty. The excursion Committee's arrangements for June include a special outing for members with hand-cameras, besides the usual two outings for the month. A paper on "Photographic Chemistry," by Mr. Joseph Davies, is promised for the meeting on July 8th.

**Lowestoft.**—At the photographic meeting on the 14th inst., Mr. W. Stringfield presiding, on completion of the business, the Rev. A. Wells exhibited some very interesting slides illustrating his travels in Constantinople, Florence, and elsewhere. Mr. Estcourt gave a further instalment of his stereoscopic views of Burnham Beeches, the tone and quality of which were excellent. Mr. A. M. Smith also produced some half-dozen slides, evincing careful work with due appreciation of the artistic.

**Spenn Valley.**—The June meeting of this society was held at the Coffee Tavern on the 9th inst. Dr. Farrow (President) occupied the chair, and there was a fair attendance of members. Mr. J. H. Jackson, photographer, gave an interesting paper on "Cloud Negatives, how to Make and Use them," and at the close a number of Mr. Jackson's lantern slides were exhibited and much admired.

**Sydenham.**—The first excursion of this club was made on the 6th inst., when a good muster of the members met at London Bridge Station, whence they journeyed by train, picking up fresh contingents *en route*. Waddon was reached about three. Mr. George Austin,



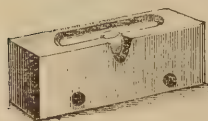
taking the party under his guidance, conducted the members through some charming scenery, where many successful exposures were made. At 6.30 the party arrived at the Greyhound Hotel, Carshalton. While waiting for tea the few plates left to the party were exposed on the church, pond, and village street. The 8.15 train landed the members home in good time, well pleased with the afternoon's work. On the following Tuesday evening an ordinary meeting was held at the head-quarters of the club, the President in the chair. The discussion was upon the work done during Saturday's excursion. Some very good prints were shown by Mr. Zimmer; amongst them was a group of the whole party, which was much appreciated by the members. Mr. G. Austin's hand-camera subjects caused some amusement, he having caught several members unawares. Mr. P. Barlow showed some excellent work in Obernetter paper, upon which he was complimented. A large number of prints were passed round, and criticised by members and visitors.

**Stockport.**—The Secretary writes:—Last Wednesday (10th) was our annual meeting and election of officers. We have over 100 members, and start again with a good balance, and two good lanterns (lime and oil) purchased during winter. List of officers: President, Thomas Kay, Esq.; Vice-Presidents, Messrs. W. B. Leigh, W. Banks, G. Hilderley; Hon. Treasurer, F. G. Brookes; Hon. Secretary, Henry J. Robinson (Pittville House, Shaw Heath); Council, Messrs. A. M. Gourley, H. J. Heginbotham, G. H. Broome, Thos. Bedford, C. Dawson, Col. Turner, Oliver Coppock, H. D. F. Dobson, Samuel Kay, A. White, George Ball, junr., and J. Preston.

**Tunbridge Wells.**—The fifty-ninth ordinary meeting of the above association was held on the 11th inst., Mr. Pierson in the chair. Mr. Lewis Hepworth was elected a member. The prints of Scotney Castle, the result of the excursion there, were exhibited and were favourably commented on, after which members viewed the prints which had been sent in for competition to the AMATEUR PHOTOGRAPHER; "Enlargements" and "River Scenery" were the two sets. They proved most interesting and instructive, were well criticised, and lessons were gathered from them, especially by those who were fortunate enough to have received the *Photographic Reporter* before looking them over and seen the official criticisms. Mr. Lewis showed some old wet plates, also some developed with tannin and tannin and honey. Mr. Catchpole kindly lent for inspection some old prints which had been in his possession over thirty-eight years, and had belonged to Sir William Newton, who was portrait painter to Her Majesty at that time and had been manipulated by him. Some were very much faded, others in a good state of preservation. One was from a painting, and represented the christening of, most likely, the Prince of Wales; one was of the wedding of the Queen; and one with the Queen in her robes seated, the Duke of Sussex kneeling and holding her hand, the Duke of Cambridge standing at the back of him, surrounded by her court, including the Duke of Wellington with the Duchess of Sutherland and Lady C. Lennox standing behind the Queen's chair. The others were fine specimens of old trees. These were of more value, as coming after Mr. Prince's lecture of last month, when members were treated to a sight of some very old paper negatives. Mr. Cassingham showed a stereoscopic camera for twelve stereos or twelve quarter-plates or twenty-four lantern plates, which was considered to be the most compact little camera for the purpose yet seen. The pair of lenses fitted could, by a simple contrivance, be used for two pictures or one. It was proposed that some of the excursions should fall on a Wednesday, so that those unable to attend on the Saturday should have an opportunity of participating in the pleasures of the outing.

**Wakefield.**—A ramble was arranged for the 6th inst., to Heath Common and Kirkthorpe. The day being very windy, however, only three members turned up, which is to be regretted, as Kirkthorpe is prettily situated. The only plates exposed were on the interior of the church, good results being obtained by twenty minutes' exposure on Paget's fifty times plates, stop f/32. The following rambles and excursions have been arranged:—Saturday, June 27th, Walton, including Barnsley Canal; train leaves Kirkgate, 12.43 p.m. Saturday, July 18th, Brockdale (by special permission), wagonette 12 noon. Saturday, August 8th, Rostell village and Park, train from Westgate 12.45 p.m. Should the weather on above dates prove unfavourable, the excursion will be postponed until the Saturday following, and if then unfavourable will be abandoned.

**A New Level.**—Messrs. Taylor, Taylor, and Hobson have sent us their No. 5 level, of which they say:—"One of these levels used on the side of a camera swing-back will insure the avoidance of the vertical distortion or leaning, which is often so noticeable in photographs of buildings, etc. Another on the back will insure the true horizontal placing of it." Our opinion of the work turned out by this firm is well known, and the "level" is up to their usual high standard. The price is 1s. 6d.



## Quarterly Examinations in Photography.

**Question 29.**—What are the advantages and disadvantages of dry collodion plates as compared with gelatine dry plates? Give an outline of the dry collodion process.

**ANSWER.**—The advantages of collodion dry plates over gelatine are two—1. Finer division of the particles, and consequently greater delicacy. 2. Greater ease in intensifying if necessary. With gelatine this is uncertain and risky; with collodion certain and safe.

The disadvantages are—1. The bad keeping qualities of collodion plates; after a very few days they appear full of pinholes. 2. The slowness of collodion plates, which makes rapid work impossible.

There are three great branches of the dry collodion process, viz., the bath process, in which the coated plate is dipped in the silver nitrate sensitising solution; and the "washed" and "unwashed" emulsion processes, in both of which the plate is coated with an emulsion previously sensitised. It is, therefore, impossible to give details within the limits of all these processes, specially as in some the silver, and in some the bromide, is in excess. There are some points, however, common to all, and these I give:—

1. The plate must be cleaned with nitric acid or potash.
2. A substratum or edging must be put on of albumen gelatine or india-rubber.
3. The plate is coated and sensitised, or coated with sensitised collodion.
4. When the bath process is used, the free nitrate must be removed by washing.
5. The preservative, which acts as an absorbent of the halogen liberated, such as beer, is applied.
6. The plate is dried, possibly backed, being very translucent, exposed and developed. Details want of space prevents my giving.

R. C. M.

**Question 30.**—Give a brief resumé of the leading iron printing processes.

**ANSWER.**—All iron printing processes depend on one leading principle, viz., the action of light reduces ferric salts to the ferrous state.

1. Sir John Herschel's process: In this, ferrous sulphate is precipitated by ammonia, and the oxide washed by decantation. A saturated solution of citric acid is prepared, and to this is added the oxide. After neutralising with ammonia the solutions are mixed and diluted with an equal quantity of water, when paper is floated on it, which, when dry, is exposed and developed by potassium ferricyanide, being fixed with very dilute hydrochloric acid. This gives blue prints.

2. A modification of this, known as the "blue" printing process: In this the ferric salt, ammonio-citrate of iron, prepared as above, is mixed with potassium ferricyanide, and blue prints are obtained which require no development, but only require to be washed to dissolve out the soluble salts.

3. The platinotype process, which depends on the reduction of ferric oxalate to a ferrous state by light. This is the visible effect we see on exposing the paper to light. In the hot-bath process the ferrous oxalate, when placed in a hot solution of potassic oxalate, reduces the chlorides of platinum to a metallic state. In the cold bath and printing-cut processes the after-effects are different, but so far as these are iron processes the action is the same. R. C. M.

### QUESTIONS.

34. How would you recover platinum residua from papers, etc., as used in photographic processes?
35. How would you intensify a black and white line negative?
36. Are gelatine dry plates to be depended upon for accurate scientific measurements? Give reasons and authorities for your answers.

(Latest day for Answers, June 29th.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A nom de plume may be used, and must follow every answer, but in every case the full name and address must be written on the back.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

**NOTE.**—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER,  
1, CREED LANE, LONDON, E.C.



## Reviews.

*Handbuch der Photographie für Amateure und Touristen.* By Major G. Pizzighelli. Vol. i., *Die Photographischen Apparate.* 2nd edition. Published by Wilhelm Knapp, Halle a/S. Price 8s.

The author of this work is well known as an authority on photographic matters, and it was only to be expected that a second edition of his practical Handbook should be called for. The volume before us is a handsome and useful book of nearly 500 pages, with over 500 illustrations in the text. The treatment of the subjects is practical and fairly exhaustive, and the very latest information on the leading photographic apparatus is given. The book is divided into seven parts. The first treats of the pinhole camera, and the author gives us a useful table showing the distance of the screen from the aperture, with the correct diameter of the latter. The second part is devoted to the lens, and the leading optical principles involved in the construction and use of the same, and in this part the author gives a very useful summary of the ratio apertures of all the new types of foreign lenses made with the new Jena glass. Part three is devoted to the camera, and the newest types of camera construction are shown, with practical notes on the same. A fairly exhaustive account of the leading shutters and a very complete description, with illustrations, of the foreign hand-cameras, closes this part. In part four we have clear, practical hints on

the choice of camera and lens. Part five is devoted to stereoscopic photography, the principles of double vision, and preparation of stereoscopic images. Part six includes enlarging and reducing apparatus for day and artificial light. Part seven, apparatus for magnesium flash light. Taking the work as a whole, it is well written from the practical standpoint, and forms an excellent handbook to the choice and use of apparatus.



### Honours for Mrs. Grimwood: Enterprise in Journalism.—

Although the Government did not confer the order of the Crown of India upon Mrs. Grimwood, she has received two tributes to her heroism. One, the Royal Red Cross conferred by the Queen; and the other, the Gold Victoria Olive Wreath, which is awarded by the proprietors of the *Gentlewoman* to those who distinguish themselves by some act of womanly devotion. Mrs. Grimwood richly merits both these distinctions.

**Our Competition Photographs.**—The *Essex Herald* of the 16th inst. says: "The *Photographic Reporter*, a monthly illustrated magazine devoted to the advancement of photography, gives in its issue for June a capital colotype reproduction of Mr. Alfred J. Jeffreys' photograph 'A Country Road in Essex,' which secured the bronze medal in the AMATEUR PHOTOGRAPHER's recent 'Inland Scenery' competition. We have had occasion to refer to Mr. Jeffreys' successes in the photographic world before. His latest triumph represents a delightful scene on the road from Chelmsford to Galleywood. The picture is as perfect as it well can be; it is the work of a thorough artist."

## To Correspondents.

THE insertion of QUERIES and ANSWERS is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES

4775. **Cheap Reducer.**—Can anyone recommend a cheap reducer for negatives which have been over-developed?—GADLYS.

4776. **Varnish, how to Remove.**—How can I remove varnish from a negative so as to reduce it?—GADLYS.

4777. **Printing Processes.**—Will some reader tell me know the printing process of Celerotype, Kallitipe, and Pyroxyline papers; whether they are printed out like ordinary silver paper, or developed like bromide paper? Also say what paper is best for an amateur who has not much time on hands for toning, etc., etc.—S. ARMSTRONG.

4778. **Ferro-Prussiate.**—Will some reader say if ferro-prussiate paper can be toned black, like bromide paper? If so, kindly give formulae.—S. ARMSTRONG.

4779. **Angle of Focus.**—Could any advanced amateur photographer inform me the correct angle of focus of a Wray's rapid rectilinear lens (half-plate)? I have tried to find it out myself, and have made it 45 degs.; is this correct? I think it is a thing every amateur photographer ought to know, but I don't.—W. H. ELLIS.

4780. **Broken Negative.**—I shall be much obliged to any reader of the AMATEUR PHOTOGRAPHER who can inform me the best way to print (if possible) from a half-plate negative which is broken into three pieces. If it is not possible to do so, what solution can I make that will take the film off of the broken pieces of

glass, so as to put it on a clean piece of glass.—W. H. ELLIS.

4781. **Varnish, how to Make.**—Could any reader of the AMATEUR PHOTOGRAPHER give me a formula for a good varnish for negatives, also the way to set to work and the price of the formula complete?—W. H. ELLIS.

4782. **Bottles, Cleaning.**—I should be glad of a solution or chemical which will clean bottles which are stained with the following chemicals, viz., hydroquinone, gold toning solution, ammonia '880 degs., and alum.—W. H. ELLIS.

4783. **Quarter Plate Hand-Camera.**—What is the best quarter-plate hand-camera fulfilling the following conditions? (1) size not over 9 by 5 by 5; (2) light weight; (3) holding twelve plates; (4) simple, safe changing system; (5) time or instantaneous exposures; (6) good shutters, varying speed, no vibration; (7) double exposure on plate impossible; (8) first-class rectilinear lens, rotating diaphragms, focusing arrangement, and finders. State maker and price.—W. M.

4784. **Focussing.**—How is it possible, when taking a photograph, to get the background correctly focussed?—J. J.

4785. **Dark Room, Highgate.**—Could anyone, amateur or professional, tell me where I could develop plates, etc., near the Chetwynd Road, Highgate?—G. BARKER.

4786. **Reducing.**—Would any brother amateur kindly tell me of a safe way to "reduce" water in a landscape negative, which prints "chalky"? Have tried spirit without success.—COLONIST.

4787. **Developer for Ilford Plates.**—Would some fellow reader tell me whether this is a good developer for Ilford plates, ordinary? The following is the quantity for developing a quarter-plate:—

Pyrogallie acid	...	...	2 grs.	Freshly
Water	...	...	1 oz.	mixed.
Liquor ammonia	...	...	3 minims.	
Bromide of potassium	...	...	8	

If not, would someone tell me a good one? I want to know the amount to be used in developing a single half-plate.—BEGINNER.

4788. **Lowestoft.**—Am going to Lowestoft very shortly, and shall stay a day or two. I shall take my quarter and half-plate cameras. Will anyone tell me of a few places worth taking, both in town and neighbourhood? Where can Ilford plates be obtained, and which is a good hotel, moderate living? Which of the Ilford plates shall I take for instantaneous views of shipping, using Lancaster's Instantograph? Any hints will be very acceptable.—PERCY. [Note.—See AM: PHOT: (article) August 31st, 1888.—ED.]

4789. **Quarter-Plate.**—Will any of the readers of the AMATEUR PHOTOGRAPHER, who fully understand the subject, kindly inform me what make of quarter-plate camera is the best, and most perfect in all modern improvements and finish, and what lens and shutter are most fitted for all kinds of work? I want a first-rate instrument, and one to which I could have an Eastman's roller fitted; there are so many different makers I feel sorely puzzled from which to buy.—THOS. JAMESON.

## QUERIES UNANSWERED.

May 29.—Nos. 4711, 4728.

June 6.—Nos. 4727, 4729, 4732, 4738, 4740, 4746, 4749, 4750.

„ 13.—Nos. 4767, 4769.

## ANSWERS.

4736. **Exposures.**—1-25th sec. and 1-60th. For taking yourself in a group or in a picture where other figures cannot be got, use the Self-Portrait shutter sold by W. Tylar, Birmingham; price for 2 in. lenses, 5s.; 3 in., 7s. 6d.; or Underwood, also at Birmingham, price 3s. 6d.—PHENIX.

4737. **Quick Printing.**—"X." has been misinformed. He can get his paper at Adams and Co.'s, 81, Aldersgate Street, E.C., either in sheets at 1s. or in packets. Fifty quarter-plate, 1s.; fifty half-plate, 1s. 9d.; also see p. vi. of advertisements in AMATEUR PHOTOGRAPHER for June 12th. The question is answered there.—PHENIX.

4751. **Half-Plate Camera.**—Thornton-Pickard Ruby camera is a good one. Price with three dark slides, £5 17s.; tripod, £1; 7 by 5 Optimus Euryscope, £4 14s.; Thornton-Pickard shutter, time and instantaneous, £1 0s. 6d.; total, £12 11s. 6d. If you get an Optimus R.R. lens it would make about 34s. less, or you might have a 7 by 5 landscape lens, which would make the bill still less.—PHENIX.

4752. **North Wales Tour.**—I am sorry I can give you no information regarding hotels, etc., but I give a list of a few places here. I see you do not include Conway in your list, but I should advise you by all means to visit it; it would be worth going to Wales for this place alone. The chief objects of interest here are the town wall, the castle, a splendid ruin, and from whose walls some capital views may be obtained of the town, bridges, river, etc.; Plas Mawr, an old mansion, with the customary bed upon which Queen Elizabeth slept; the suspension and tubular bridge, and the harbours. At Penmaenmawr you could get some pictures of the quarries, cable railways, etc.; and at Aber, near Llanfairfechan, there is a waterfall. Four miles up the Conway is Tal-y-Cofn, with a charming ferry, and, at low tide, rapids, an otter weir, and other traps may be seen. Four miles further is Trefriw, and up on the left some pine-clad mountains, with a sulphur mine, a hydropathic establishment, and, close by, the famous Llanwrst Bridge. Bettws-y-Coed is about five miles beyond Trefriw. Altogether, it would well repay your trouble to walk from Conway to Bettws. The scenery all up the Conway is beautiful. Up to the right, near Trefriw, is a large wooded mountain, with a large lake on the top, and the scenery is altogether very wild. I should advise you to go to Beaumaris also.—PONTY. [Note.—See AM: PHOT: articles in August 26th, 1887, and June 14th, 1889.—ED.]

4752. **North Wales Tour.**—You will find all round Bettws-y-Coed one of the most delightful places for photographing in, and it may well be called the cream of the Welsh scenery. The Royal Oak Hotel is a favourite one, and David Cox's picture may still be seen there. There is the Waterloo and Gwydr Hotels, but I think you would like the Royal Oak. Not far from the Waterloo Hotel you will come to the bridge, which was built in the time of the battle. Pont-y-Pair, in Bettws, is very beautiful, and you would find at least half a dozen pretty pictures round here. Do not miss either the Conway Falls or the Fairy Glen, both extremely beautiful. The Lledr Valley and Pandy Mill are very interesting, especially up the Lledr Valley, where you will come to Pont-y-Pant, and find a picturesque old bridge across the waterfall. The Miners' Bridge and Swallow Waterfalls are both within easy walking distance from any of the hotels. Aberglaslyn is very grand, and you will find endless beau-



4774. **Exposure.**—I used to go by the table on tiful bits for photographing, the Bridge at Pont Aber-glaslyn, and round it. The Goat Hotel at Bedd Gelert is a very comfortable one, and not far from it you may come across an old lady in Welsh costume, knitting. She was there last August and would make an interesting picture. The sight at Llangollen of water is one never to be forgotten, with the lovely stone bridge across, which comes upon you so suddenly. I was not able to take a photograph of it, as the train only stopped about two minutes there, but if you go that way I should advise you to rig up your camera in the train and take a snap-shot. The "Gossiping Guide to Wales," price 1s., will give you information on almost every part of North Wales.—A LOVER OF WALES.

4753. **Green Colour on Negatives.**—Insufficient fixing, or you expose to light before thoroughly fixed.—PONT0.

4758. **Green Colour on Negatives.**—I think "H. M. D." must have forgotten to put the negative in water after developing.—W. H. ELLIS.

4753. **Green Colour on Negatives.**—Probably green fog, caused by ammonia developer. Try using soda or potash as the alkali, or ferrous oxalate developer as a preventive. For a remedy, use the following:

Ferric chloride . . . . . 50 gr.  
Potassium bromide . . . . . 80 "  
Distilled water . . . . . 4 oz.

Soak negative in this for a minute or two, when fog will disappear and density be reduced; rinse well, and apply a ferrous oxalate developer till required density is attained. Refix and wash.—PEN.

4754. **Spots and Faded Prints.**—Methylated spirit will do no harm, but I should fight shy of carbolic acid.—PONT0.

4754. **Spots and Faded Prints.**—Carbolic acid and methylated spirit are so much used in mountants that I expect they do not spot and fade prints.—PHENIX.

4754. **Spots and Faded Prints.**—Methylated spirit will do no harm whatever in mountant, but you must only use a drop or two of carbolic acid.—PEN.

4754. **Spots and Faded Prints.**—Methylated spirit will do no harm, nor will a little carbolic acid, and a very minute quantity will be sufficient.—R. A. R. BENNETT.

4755. **Early Morning Photography.**—I suppose Lancaster's Instantograph lens would behave the same between 6 a.m. and 7 a.m., as any other lens at the same aperture. As to the exposure, it is impossible to say, unless you give the nature of the subject. Make a few experiments, and get an exposure table. If you use Thomas's plates, there is a table on the box.—PONT0.

4755. **Early Morning Photography.**—I think "W. F." will find that Lancaster's Instantograph camera will answer his purpose for early morning photography; exposure and stop is a question of light and object he is taking. If he is taking a landscape with the sun shining, stop f/22 and about 2 seconds exposure would do; if taking a building in a dull light, stop f/11 and 10 seconds exposure; if the sun is shining or a very bright light, stop f/22 and 2 seconds exposure. Why not buy "The Photographer's Systematic Exposure Note-book," price 1s., to be obtained at any photographic material dealer's?—W. H. ELLIS.

4756. **Bettws-y-Coed.**—You will find Bettws-y-Coed a most delightful place for photography, and you will do well to take plenty of plates. Mr. Parry, chemist, has a dark-room and sells photographic materials, I think. The Conway Falls are very grand and about three miles from Bettws, also the Fairy Glen and Pandly Mill, all well worth photographing. The Miner's Bridge and Swallow Waterfalls are a very short distance from any of the hotels. Up the Lledr Valley to Pont-y-pant it is extremely beautiful; indeed, you will find it difficult to come across anything that is not lovely there. Pont-y-pair Bridge and all round it is very interesting. Buy the "Gossiping Guide to Wales," 1s. You will find endless information in it, besides several sketches of the different places.—A LOVER OF WALES.

4757. **Developer.**—As a rule you cannot do better than stick to the formulae sent out with plates. You can easily get your chemist to make up any formula for you. But why be afraid of a little trouble?—PHENIX.

4757. **Developer.**—Ilford plates have many admirers and some detractors. Why change if you are doing well? I prefer Paget xxx. I was never pleased with ready-made developer since I began to mix my own. The developer recommended by the maker of the plate is generally the best for that brand.—PHOS.

4757. **Developer.**—If "D. G. H." has not tried Lockyer's hydroquinone developer I should advise him to do so, as I have found it suits most other makes of plates of each rapidity, and it brings out the details always if exposure, etc., be correct. It costs 1s. 8d. per half pint and 2s. per pint, and can only be obtained at the manufacturer's, Lockyer, 83, Evelyn Street, Deptford, S.E., and of two special agents, viz., W. Edwards and Son, 157, Queen Victoria Street, E.C., and J. Fallowfield, Lower Marsh, Lambeth, S.E.—W. H. ELLIS.

4758. **Printing.**—On page viii. of AMATEUR PHOTOGRAPHER, June 12, you will find three printers advertised. One of these will surely suit you. You should keep your eyes open.—PHENIX.

4759. **Half-Plate Camera.**—As you evidently require a first-class outfit, I would strongly advise you to get a list from J. Billcliffe and Sons, Richmond Street, Chorlton-on-Medlock, Manchester, who makes one of the very best finished cameras in the market, having all the latest movements, swing-back, rising front and turntable head. They can supply you with a first-class tripod, four-fold, and a case (waterproof) to hold camera, three double backs, stops, lens, focussing cloth, and tripod. The whole outfit will not cost more than the sum you are prepared to give, and a better made set you cannot find.—ONE WHO USES THE MAKE NAMED.

4760. **Distilled Water.**—Filtered rain water will do just as well, without boiling. If you boil ordinary tap water for half an hour and allow to cool, it will also answer.—PEN.

4760. **Distilled Water.**—In answer to "Country Cousin's" query, I should think he could not do better than get the Champion still, which costs complete only 8s. 3d., and is always useful for distilling water. It can be obtained at most photographic dealers.—W. H. ELLIS.

4760. **Distilled Water.**—Concentrated solution ought, if possible, to be made with distilled water. Rain, collected at the end of a heavy shower, comes next in the order of purity. Melted snow (when that can be had), is said to be extremely pure. If hard water be used, it should be boiled several times, in different vessels, and filtered through white blotting paper. Straining through muslin is not very effective; cotton wool is better.—PHOS.

4761. **Hintokinone.**—The best way to use the above developer is to have two trays, one containing 1 part developer to 9 parts water, and the other 1 part to 18 parts water; put into the weaker solution first, and if it shows signs of over-exposure, finish it in that; if not, finish in the stronger solution. I prefer a two-fluid developer myself.—PONT0.

4762. **Alum, Before or After Fixing.**—Not before fixing with quinol, as the alum sometimes leaves unpleasant dark patches on the plate.—PHENIX.

4763. **Masks and Discs.**—A vignette glass is usually used. Cost about 1s. 6d.—PONT0.

4764. **Toning.**—In reply to John Boughey's query, I think the toning bath which I described in my answer to Query No. 4722 will suit most double albumenised sensitised papers that are made. The best way to make sure of this fact is to write to the manufacturer of the paper or to the dealer of whom you purchased it. I have never used any other toning bath but that I have stated, and I know I have used several kinds of paper (albumenised).—W. H. ELLIS.

4765. **Rochester and Chatham.**—Rochester Castle, Chatham Harbour, etc., and perhaps you could get admission to the Naval Dockyard. See AMATEUR PHOTOGRAPHER, answer 3957, July 11th, 1890.—PONT0.

4766. **Blackening Slides.**—I should advise "A. D. F." to try Bate's blacking for metal dark slides.—W. H. ELLIS.

4768. **Eikonogen Formula.**—  
Eikonogen . . . . . 4 gr.  
Sodium sulphite . . . . . 32 "  
Lithium carbonate . . . . . 2 "  
Water . . . . . 1 oz.

Perhaps this may want further diluting.—PHENIX.

4768. **Eikonogen Formula.**—Try this:  
Sodium sulphite . . . . . 5 parts.  
Carbonate of potassium . . . . . 2 "  
Eikonogen . . . . . 1 "  
Boiling distilled water . . . . . 3j

Soak the paper after exposure in 4 parts of water, and when limp add 1 part of the above; if the image hangs fire, add more solution. Do not use bromide. After developing, wash well and place in an alum bath for several minutes, then again wash and fix.—PEN.

4770. **Enlarging.**—Easily done, but takes too much space to explain here. Get Wall's "Dictionary of Photography," where all your queries are answered.—PEN.

4771. **Lantern Plates.**—See answer to Query No. 4753 this week.—PEN.

4772. **Blisters.**—Try a saturated solution of common salt after fixing; or a bath of methylated spirit. If these fail, change your brand of paper.—PEN.

4772. **Blisters.**—In answer to "Scribo," it is rather difficult to say the best way to prevent prints from blistering. He must have had the various baths warm and then put the prints into cold water, which caused the prints to blister. Read the first part of my answer to Query 4722 in the AMATEUR PHOTOGRAPHER of June 5th, 1891, or put the prints into a weak solution of Epsom salts before developing.—W. H. ELLIS.

4773. **Instantaneous Work.**—I should advise "Scribo" to use the Barnet plates, rapid, for instantaneous work.—W. H. ELLIS.

4773. **Instantaneous Work.**—I should recommend Mawson plates or Paget's xxxxxx. You will want a good strong light if you use the Instantograph single lens.—PAN.

4773. **Instantaneous Work.**—Try Thomas's extra-rapid, Paget's, or Monckhoven's, which are sold by Negretti and Zambra, and are as good as any I have ever used.—PONT0.

4773. **Instantaneous Work.**—A matter of choice entirely. I should use either Thomas's extra-rapid, Marion's Britannia Special Rapid, Paget Prize, or Barnet. If you like Ilford, and get good results with them, why not stick to their Extra-Rapid brand?—R. A. R. BENNETT.

Thomas's plate boxes. Get an empty box. For the view you mention I should give about 4 secs.—PONT0.

4774. **Exposure.**—My advice is, get Wormald's tables (from A. R. Wormald and Co., 82, Bishopsgate Within, E.C.), which are as good as any, and stick to them.—R. A. R. BENNETT.

4774. **Exposure.**—As far as I know about exposure, I should think Burton is the most correct of the three. If you have not got the "Photographer's Systematic Exposure Note-book," which costs 1s., and can be had at any photographic dealer's, I think you could not do better than get one. I have found that when I go by this book the exposure generally turns out correct.—W. H. ELLIS.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us before TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

E. H. K.—Flood the plate with the solution o quinol to which you have added half a grain of bromide of potassium for every ounce of solution, then add one-fourth of the usual quantity of accelerator and allow to act for one minute; if nothing, or only the high lights appear, add another quantum of alkali and allow development to proceed as far as it will, adding still more alkali if required.

G.—(1) The A lens is as good a lens as one can wish to use. (2) We consider A quite equal to B. (3) None better than A. (4) We should prefer the 10 in., or if your doublet is 8 in., try a 11 or 12 in. lens. (5) The exposure for a Swiss landscape depends to a great extent upon the foreground; if you have a mass of dark pines or a dark rock in the foreground, you must expose for the dark foreground, and totally disregard the bright snowy distance. In developing, commence development with about 1-10th of a grain of pyro to the ounce, three minims of ammonia, three grains of bromide; allow this to act on the plate till the detail shows, then add another 1-10th grain of pyro, and continue development till nothing more can be coaxed out; then pour away your developer and apply fresh solution strong in pyro and bromide to gain density. It is necessary for good results to use a thickly coated rich-in-silver plate and perfectly orthochromatic.

H. I. C.—We have stripped the gelatine from your film, and find that the celluloid can be made perfectly clean, most of the peculiar markings being in the gelatine, and they are doubtless caused by insufficient washing between the alum and hypo bath, and consequent decomposition of the latter; or to precipitation of hydrate of aluminium in the alum bath by the alkali of the developer. Wash the films well before putting into alum, and then thoroughly before putting into the hypo.

R. DUDLEY TUCKER—Letter by post.  
H. H.—Send us a print with stamped envelope, and we will reply by post.

KID.—We have seen the slides and have found them to be well made and perfectly light tight.

LEO.—If you want a cheap half-plate portrait lens you cannot do better than buy one of Hookin, Wilson, and Co.'s "Desideratum" lenses. See advertisement AM: PHOT: June 12.

JOE CHAMBERLAIN.—Shall be pleased to see you and the prints.

MCGINTY.—If they have not taken prizes, and conform to the conditions of our "Photography at Home" Competition, they will be eligible.

E. P.—Will probably write you.

R. GORDON.—We are writing to you.

J. C. M.—Why not send an advertisement, as other firms who print from amateurs' negatives?

SERGEANT BEAL.—Your negatives were smashed when received by us.

A. J. LEESON.—Will look up MS. and send you.

CHARLES STEWART.—Call on Messrs. McGhie and Co., 75, St. Vincent Street, or Messrs. Geo. Mason and Co., 180, Sauchiehall Street, Glasgow; we are sure they will help you.

W. H. ELLIS.—Many thanks for correction.

JOHN J. HENSMAN.—Photograph duly received, for which many thanks.

BACCARAT.—No complaints have reached us, there should be no reason for the emulsion washing off. "Celerotype" is made white as well as tinted.

R. C. H.—Two books will help you: "Dictionary of Photography," by E. J. Wall (2s. 6d.), and "Amateur Photographer's Annual" (1s., cloth, 1s. 6d.).

C. E. F.—Use Celluloid. You can get it from Fitch, or Brixton, or Fry and Co., Chandos Street, W.C.

D. CARTER.—We do not know anything about your camera being out of order; as far as we know, it was in good condition when it left us.

J. K. F.—(1) Too dense; have you not intensified this? As a picture it is excellent. (2) This gives us the impression of not being a photograph from nature, but a copy of a drawing, or something of that kind; it is about right in density. (3) Under-exposed and under-developed. (4) A little too thin. (5) Good, just right. (6) Good. Shall we return you the slides?



We should like to have a No. 1 slide, not quite so dense though. We shall be pleased to develop two negatives for you if you forward the same with full details as to lens, exposure, plate, and subject.

**TRITON.**—(1) The subject is well chosen and fairly well developed, but a little more contrast would be an improvement; the print is a little flat but well printed and toned. You should try matt-surface Celero-type or Obernetter paper, white, which would improve this, just giving you the requisite sparkle. (2) The negative is hard, due to improper development. You had black coats and white dresses, consequently you should have reduced the pyro and bromide so as to keep down the density of the whites. The print is covered with millions of cracks, due to allowing the albumen side to curl in when drying. (3) Good. (4) Good. (5) Very fair; your print shows dirty streaks in the sky, probably due to the mount, or have you been blocking out the sky? if so, and we think this is the case, you have not done it carefully enough. (6) Good. The array of soles and hobnails in the front is a little distracting; the feet of most of the little tots should have been tucked away. (7) Very good. (8) Good. (9) Flat; see note to 1. The bright water foreground wants breaking up. (10) The right-hand half of this print looks as though it had shifted in printing, otherwise good. (10) Poor. We think you ought to stand a chance in some of our competitions. You are making a mistake to change from lamplight to daylight. Write to Benham and Froud, Chandos Street, Charing Cross, and ask them to send you some of the orange glass they use in their Perfection candle lamp; two thicknesses of this is quite safe, and you would not want more than one pane glazed; the others should be temporarily blocked out with opaque material. Always pleased to help you.

**MOOREE.**—You are using the wrong plates for black and white work. See our leader next week. With regard to shutter work, it depends entirely upon speed of moving object; but about  $f/11$  and  $\frac{1}{2}$  of a second ought to be quick enough for most street work.

**DUTCHMAN.**—(1) Yes, we should certainly advise you to get a wide-angle. (2) You might obtain one of Hockins' Desideratum lenses, which are good lenses. See our advertisement pages. (3) The price of this lens is too low.

**GADLYS.**—You do not give us the focus of lens, nor distance of man; let us have these data, and we will write you privately, and send answer to your query and the formula you ask for.

**LEWON.**—We are sorry we misunderstood you. Can you tell us where the plates were obtained, or let us see a negative and the original box they were in, when we will try and help you further?

**ALLEGRO.**—We are always pleased to see work, both good and bad, and give you what you ask for now. (1) A little too panoramic. (2) Very fair. (3) Poor; the water in front should have been broken up by a boat. (4) Good. (5) The best; an exceedingly well chosen bit. These remarks apply to the artistic qualities of your prints, but, in consequence of your printing every one in the sun, you have so handicapped your work that we can say nothing as to the technical qualities. If you like to send us another batch, not printed in the sun, we shall be pleased to pick holes in your technical work. Possibly you might work well, but every print you have now sent is flat and poor, wanting in pluck and contrast, and only fit for the waste paper basket.

**F. J. W.**—Please let us know what brand of paper, and the exact method of your working.

**CAB. PHOTO.**—Pyro, 1 oz.; sodium sulphite, 4 oz.; liquid ammon. fort. .880, 2 oz.; pure carbonate of soda, 4 oz.; hyposulphite of soda,  $\frac{7}{8}$ ; alum, 4 oz.; citric, 1 oz.; chloride of gold, 15 grain tube; acetate of soda or borax, 1 oz. These are sufficient for ordinary amateur work for negatives and silver printing. If you want to do bromide, platinumotype, or lantern work, a few more would be needed, and we will give you list if you let us know. We are presuming you require the chemicals as an amateur only; if wrong, let us know.

**NOVICE (co. Tipperary).**—Letter by post.

**G. H. SUTCLIFFE.**—Your advertisement is repeated under "Sale and Exchange." It was inadvertently inserted in the "Wanted" column.

**F. READ.**—We have written to you.

**RACHOLA.**—Reply next week.

**FRED DAVIS.**—Too late for this week, will appear next. Many thanks.

**S. ARMSTRONG.**—The following calculations answer your questions: (1) Supposing the horse moves at the rate of 15 miles per hour, it will move 22 ft. per second, then—

$$240, \text{ distance in ins. } \div (8\frac{1}{2} \times 100) = 240 \div 850 = \frac{24}{85} = .282$$

$$264, \text{ speed per sec. } \div \frac{24}{85} = \frac{204 \times 85}{24} = 935.$$

$\therefore$  the shutter must work at  $\frac{1}{935}$  of a second to give a sharp image.

In the case of the train going at 80 miles an hour at the same distance the shutter must obviously work at  $\frac{1}{1168}$  of a second. You do not tell us what shutter you are using, but presuming that you know the fastest speed of your shutter, the following little rule will give you the distance to place your camera to obtain a sharp focus: Multiply 100 times the focus of the lens in inches by the space through which the object would pass during the exposure, and the result is the distance in inches between lens and camera. (2) The first two lenses you name are equal in merit, but the third lens is much inferior.

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, 14, 1, Creed Lane, Ludgate Hill. Halfpenny stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the sender to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending buyer to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the seller. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, 14, 1, Creed Lane, Ludgate Hill, London, E.C. A nominal charge of 1s. is made whether a sale is effected or not.

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**Bicycles.**—Bicycle, Facile safety, good condition, lamp, bell, all accessories; £8.—Webb, 123, Rushmore Road, Clapton.

48 in. bicycle, in fair condition, brake to back wheel, would suit learner; will exchange for good half-plate R.R. lens; state maker. — James Randles, Bridge Street, New Mills.

**Cameras, etc.**—Sands and Hunter's 5 by 4 Exhibition camera, with three double backs, quarter-plate carriers, lock case, splendid condition; £3 10s.—Tyson, 12, Halcyon Road, Birkenhead.

Whole-plate camera, three slides, tripod stand (very strong), two fronts, in splendid order, almost new; £6 only; approval of Editor. — H. Holt, Conservative Club, Liverpool.

**Cameras, Lenses, etc.**—Cameras, 6½ by 4½, five double slides, removable partition for stereos, pair 5 by 4 R.R. lenses, £4; pair compound stereo lenses, working  $f/4$ , 25s.; Marion's Academy camera, for twelve 14 in. plates, cost 50s., sell 10s. — Collins, Chalfont, Slough, Bucks.

Whole-plate Exhibition camera, three double backs, Ross' rapid symmetrical lens, quite new; offers?—Camera, Heyside, Royton, Lancs.

Half-plate 1891 Lancaster's Instantograph camera, R.R. lens, stops, shutter, two double slides, tripod, leather case. — Harry Walker, Thomas Street, Heckmondwike.

Lancaster's Special 1891 brass-bound quarter-plate Instantograph, three double backs, best lens, iris diaphragm, new pattern, See-Saw shutter, complete in case with lock, tripod, etc., cost £4 1s. 6d., price £3, quite new; printing frames, dishes, lamp, plates, paper measures, chemicals, etc., all new, £1, the lot £3 10s. — Edwin A. G. Jewitt, Matlock, Derbyshire.

Quarter-plate camera, lens, double dark-slide, tripod; 12s.; a bargain. — J. Lister, 102, Western Road, Jarrow.

Quarter-plate Merveilleux camera, lens, two double slides and stand, and 150 numbers AMATEUR PHOTOGRAPHER; will exchange for half-plate 1891 Instantograph, with three double slides, no lens; will give a little cash. — Graham, New Lanark.

Bargain, Meagher's half-plate improved portable bellows camera, with three double backs, double swing-back, reversing back, etc., all brass-bound, and in solid leather case, with lock and keys, tripod stand in separate case, also Dallmeyer's 6 by 5 rapid rectilinear lens, with iris diaphragm, fitted to above; the lot £12 10s., all new. — C. Hornby Villa, Hoylake, Birkenhead.

Camera, whole-plate, square, leather bellows, folding tailboard, Grubb's lens, tripod; no rubbish; cash offers. — Sansome, 4, South Beach, Blackpool.

Lancaster's quarter-plate Instantograph, cost £2 2s. last December, complete with lens, shutter, double slide, tripod; price 30s., or nearest offer. — Gilkes, Albion Square, Cheltenham.

Tourists' 5 by 4 mahogany double extension camera, swing-back, rising front, three double solid slides, Lancaster's Iris lens and shutter, good as new; lowest

price 48s.; bargain. — L., 93, Florence Road, Finsbury Park, N.

Half-plate Instantograph, complete, £3. Wanted, good make 7 by 5 Euryscope or R.R. lens. — W. Brown, East View, Chorley, Lancashire.

Marion's 5 by 4 camera, two double slides, R.R. lens, and sliding tripod; 23s.; or sell separately. — Camera, 48, Guilford Street, Russell Square.

**Hand-Cameras, etc.**—No. 1 Kodak, with spool, 100 exposures, original, and only just removed, altogether equal to new, one costing five guineas; accept half price. — Delia, care of AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Genuine bargain. Hand-camera, cloth covered, holds 12 quarter-plates, perfect condition; sacrifice for 16s., or exchange for three Tylar's half-plate metal slides, Fallowfield's walking-stick stand, or offers. — Graham, Springhill, Downs, Bowdon, Cheshire.

Collins' 8-guinea detective camera, a splendid instrument, new; will sell for 135s.; approval; deposit; or it can be seen any time by appointment. — Lock, care of A. and G. Taylor, 78, Queen Victoria Street, E.C.

Presto detective camera, with one extra double dark-slide, quite new; only 9s.; bargain. — Dalby Smith, St. Thomas Street, Weymouth.

Quarter-plate hand-camera, to take 12 plates, finder, covered Russian leather; bargain, 27s. 6d.—14, George Street, Stroud.

No. 1 Kodak, cost £5 5s., first-class condition; price 60s., or offers requested. — Dr. Hodges, Park Road, Gloucester.

Watson's Vannack hand-camera, new about three months ago, and very little used; £8 8s.—Dr. Winter, 4, The Birkenlands, Hilsa, Cosham, Hants.

Hand-camera, quarter-plate, new, eboused, with reservoir, no dark-slides required, good shutter attached, suit R.R. lens 5 to 5½ in. focus; 12s. 6d. — Hooper, 2, Cumberland Road, Hanwell.

**Lenses, etc.**—Rapid view lens (by Taylor, Taylor, and Hobson), 8 by 5, with iris diaphragm, in perfect condition; approval on deposit; 35s.—W. S. Lowson, 16, Westborough, Scarborough.

Half-plate rapid rectilinear, perfect definition, stops, good maker; 30s.—Tyson, 12, Halcyon Road, Birkenhead.

On sale, Ross' 10 by 8 portable symmetrical lens, 10 in. focus, cheap, nearly new, free from scratches or blemishes. — Warburton, Oak Road, Withington, Manchester.

Rapid rectilinear lens, half-plate, new, only used few times; 20s.; approval. — Parker, 81, Grove Road, Norwich.

Fine whole-plate rapid single lens,  $f/8$ , conical mount; 22s.—Setacci, 41, Waldemar Avenue, Fulham.

Portrait cabinet combination lens (Derogy) in perfect order, valued by optician two guineas; for 25s.; stops missing; or in exchange for Ashford's tripod, 8 in. top. — Mrs. Colville, Olde House, Shrewsbury.

10 by 8 R.R. (Crouch, London), 13 in. focus, grand instrument, quite new, cost 120s., price 80s.; 9 by 7 R.R., as new, 40s.; 7 by 5 Optimus R.R., new, 38s.; approval. — Avery, 45, Park Street, Dorset Square, London.

A splendid 5 by 4 rapid rectilinear, McKellen's, 22s.; Funnell's shutter, for whole-plate or under, 22s., nearly new, cost 35s.; or exchange for Kershaw's or Thornton's. — Rigby, 125, Acomb Street, Greenheys, Manchester.

Will exchange new quarter-plate lens and solid leather travelling case, fitted to contain camera, developing and printing outfit up to 12 by 10, baize-lined, hardly soiled (the two value £3), for 7 by 5 Optimus Euryscope. — W. Palmer, 8, James Street, Covent Garden.

One of Ross' Petzval whole-plate lenses, grand definition, cost £25; exchange for Safety bicycle, or offers. — Address, A. K., 41, Northampton Street, Canonbury, London, N.

Optimus wide-angle lens, 5 by 4, new; 30s.—White, 141, Westbourne Avenue, Hull.

Optimus 7 by 5 rapid Euryscope, also 7 by 5 Optimus portable symmetrical, both fit one flange, and perfect, nearly new; what offers? — C. Smallbridge, Ivybridge, Devon.

Splendid half-plate rapid rectilinear doublet lens,  $f/8$ , new; bargain, 21s. 6d. — John Slade, Slad Road, Stroud, Glos.

Lancaster's quarter landscape lens, in rackwork, and cap, perfect; cost 7s. 6d.; take 5s.—Lemarchand, Richmond Park Road, Kingston.

For sale, whole-plate R.R. Dallmeyer lens, fitted with Newman's patent shutter, in perfect order; price £5; on approval. — C. H. Stanley, Littlecroft, Datchet.

Excellent half-plate Lightning rectilinear lens, with case of diaphragms, 23s.; also small rolling press, with silvered plate, 7s. — L., 93, Florence Road, Finsbury Park, N.

Ross' 9 by 7 plate wide-angle lens, equal to new; cost £2; price £2 15s. — Tattersall, Exchange Street, Blackburn.

Half plate R.R. lens, with seven Waterhouse stops, in case; price 30s.; on approval. — B. A. Smith, Spring Villa, Putney Road, Handsworth, Birmingham.

Dallmeyer's 2B patent lens, £7 10s.; Dallmeyer's 1B, £2 15s.; Shew's No. 6 extra-rapid rectilinear, 13 by 11, £5.—J. Biddle, 97, Medlock Street, Manchester.

For sale, Ross' portable symmetrical lens, 5 in. focus, in splendid condition, new last season; price 50s. — Hitchens, 34, Longcross Place, Cardiff.

**Negatives.**—Amateurs!! Six assorted high-class



negatives, showing density, retouching, etc., by deceased professional, sent free for 1s. 3d. — Richford, Wells, Norfolk.

**Printing Frames.** — Good half-plate printing frames, in exchange for numbers of AMATEUR PHOTOGRAPHER, "English Mechanic," or "Carpenter and Builder." — Sutcliffe, 14, North Street, Burnley.

**Set.** — First-class half-plate set, Exhibition camera, etc., Optimus 7 by 5 R.R. and W.A. lenses, as new; cost over £11; sell for £7 10s. — S., 6, Tavistock Place, Plymouth.

**Shutter.** — Lancaster's quarter-plate Chronolux shutter, giving exposures from  $\frac{1}{4}$ th to 3 seconds; price 15s. — Apply to E. C. Davis, 23, Walker Street, Burdett Road, London.

**Fundries.** — Small quantity of electric wire cotton, covered and paraffined for bell work, etc., very cheap. — Tyson, 12, Halcyn Road, Birkenhead.

Will amateurs kindly give few spare prints (unmounted) of places of interest for use in school, postage returned? — Master, Church School, Ripponden, Yorkshire.

For exchange, handsome gold Geneva hunting watch, 14 carat, beautiful face and cases, good timekeeper, almost new; will give for half-plate camera, complete. — No. 171, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Photographic van, 24 ft. by 8 ft., cheap; particulars and photograph, three stamps. — Walleit, Photographer, Normanton.

Will exchange model steam engine, 2 in. stroke, for half-plate camera or lens, or what offers? — Write, Gasman, Falkingham, Lincolnshire.

Apartments at Ventnor, I.W., in a picturesque residence, tastefully furnished, spacious wooded grounds, tennis court, a paradise for amateur photographers;

dark-room; moderate terms. — Photograph, of Mrs. Briddon, The Grove.

**Tripod.** — Underwood's polished ash tripod, as new, 15s. — Ledrek, 1, Hanover Park, Peckham, London, S.E.

### WANTED.

**Bicycle.** — Safety bicycle; exchange photographic mounts: o value, plain printed or bevelled — C., 24, Little Guilford Street, Russell Square, London.

**Cameras, etc.** — Multum-in-Parvo enlarging camera, perfect, cheap; approval. — Wm. Baird, Rathdowney, Ireland.

Half-plate camera or hand-camera; exchange large musical box, playing six airs, or sell £2. — Frederick Sharpe, Oakham.

**Cameras, Lenses, etc.** — A 5 by 4 modern camera, with bellows body, three double dark-slides, rapid symmetrical lens, tripod, etc.; approval — B., 9, Beach Lawn, Waterloo, Liverpool.

To exchange Lancaster's 1891 half-plate International, three double backs, two tripods, view lens, shutter, and view-finder for Lancaster's 1891 half-plate Special brass-bound Instantograph, three double backs, lens, shutter, and tripod. — E. Phillips, Bridge Street, Leatherhead.

**Dark-Slides.** — Three double dark-slides, half-plate size, either metal or mahogany, on approval; also good tripod stand, half-plate size; state price. — Address, S. Armstrong, Enniscorthy, Ireland.

**Hand Cameras, etc.** — Good hand-camera, quaker, or larger, cheap for cash. — Frederick Sharpe, Oakham.

Kodak, smaller size preferred; state lowest cash price; approval against deposit; send few specimens (to be returned). — Hanhart, 27, Raby Street, Moss Side, Manchester.

**Lantern Slides.** — Lantern slides of Hambledon

Lock, Wargrave, and Paddington Station (interior). — Prints to E. de Val, 68, Willes Road, N.W.

**Lenses, etc.** — 9 by 7 R.R. lens, also wide-angle ditto, must be by good maker. — Charles Smallridge, Ivybridge, Devon.

First-class rapid double lens, to cover half-plate. — Liddle, Limefield, Bury, Lancashire.

Quarter-plate or 5 by 4 W.A. lens, in exchange for quarter-plate R.R., new; extra cash, as well as lens for good one. — J. Pearson, Ainsworth Road, Radcliffe, near Manchester.

7 by 5 rapid rectilinear lens (by Wray), Iris diaphragms preferred. — S. Armstrong, Enniscorthy, Ireland. Perken's Optimus R.R. 7 by 5 lens, good condition, and cheap. — Summers, 148, Stanstead Rd, Forest Hill. Whole-plate wide-angle lens, cheap, Dallmeyer, Ross, or Optimus preferred. — D. McNeille, Stratford-on-Avon.

**Set.** — Half-plate set; exchange other photographic apparatus. — 85, High Street, Lowestoft.

**Views.** — Views, Cornwall; would purchase negatives (north coast) if suitable. — Bullmore, Newquay, Cornwall.

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**NOTE.** — SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

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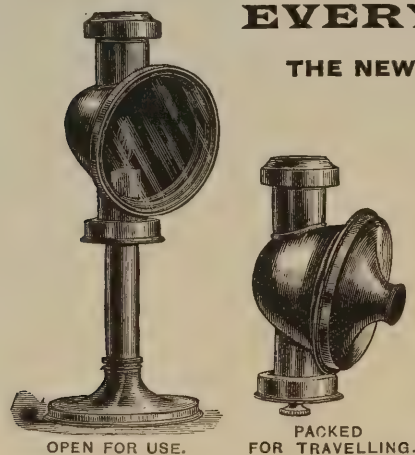
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**NOTE.** — To ensure insertion, all Communications should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.** — Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

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(Late address of the Camera Club.)



# The AMATEUR PHOTOGRAPHER

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FRIDAY, JUNE 26, 1891.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

Members of the Editing staff are "At Home" on Monday afternoons from Two till Five o'clock, and they will gladly give advice upon all photographic matters.

OUR VIEWS.—"Public Schools" Competition Awards—New Features in AMATEUR PHOTOGRAPHER—"Photographic Procedure," by E. J. Wall—A Weekly Illustration—Holiday Resorts and Photographic Haunts—The Society of Arts' Silver Medal awarded to Messrs. Green, Cross and Bevan—Quarterly Examinations—The wide-spread support of AMATEUR PHOTOGRAPHER Monthly Competitions—The "Hayfield" Competition—Vienna Exhibition—The Camera Club—Index to Standard Photographs—Bacteriology and Photography—The London Figaro states that the Grand Duke Michael intends to practise as a photographer—Some proposed Improvements in Cameras of the Tourist type—The Birmingham Daily Gazette upon photographic matters and the illustrations in the Photographic Reporter—The Scottish Postal Photographic Club.

LEADER.—Copying, Black and White.

LETTERS.—Is Photography a Fine Art? (Fred Davis)—Perspective Drawing and Vision (H. Maclean)—An Explanation (Sol)—Glasgow International Exhibition (Wm. Goodwin)—Exhibition at the Camera Club (G. Davison).

COMMUNICATED ARTICLES.—Composition, and Light and Shade (Robinson)—Chemistry for Photographers (Bothamley)—With a Camera in Austro-Hungary (Yankee Sunflower).

POEM.—Retouching.

THE PICTURE GALLERIES, ETC.—Two Brilliant Conversazioni.

NOTES.—From Edinburgh.

QUARTERLY EXAMINATIONS.

DARK-ROOMS.

SOCIETIES' MEETINGS.—Ashton-under-Lyne — Bedford — Dewsbury — Dorset — East London — Faversham — Glenalmond — Holborn — Jersey — Lewisham — Lowestoft and District — Newcastle-on-Tyne — North London — Photographic Society — Richmond — Southport Social.

It is with very great pleasure that we announce the awards in the AMATEUR PHOTOGRAPHER first "Public Schools Competition," which it will be remembered was open to boys under seventeen years of age. The number of boys entering the Competition was fifty-two, and as all the competitors had to be *at school* we are extremely well satisfied. The prizes, Silver and Bronze Medals and Certificate in each class, have been awarded as follows:—

### CLASS I.—LANDSCAPE.

*First Prize.*—C. A. Brightman (Bristol). A well chosen view, "A Spring Morning, Westbury-on-Trym."

*Second Prize.*—A. C. Newett (Rossall). A carefully selected view of "Colin Glen."

*Third Prize.*—A. C. Ellis (Haverstock Hill). A half-plate view of "The Viaduct, Hampstead Heath."

### CLASS II.—PORTRAITS, INCLUDING GROUPS.

*First Prize.*—Alfred Russell (Grays Thurrock). A well lighted and posed portrait of "Mr. Coates."

*Second Prize.*—Frank Gill (Keighley). An admirably grouped picture, "Repairing the Rent."

*Third Prize.*—A. F. Forrester (Polmont, N.B.). A fairly composed group, "A Gymnastic Class."

### CLASS III.—ANIMALS.

*First Prize.*—Herbert C. Holden (Giggleswick). A capital portrait of a boy and donkey, "A Morning Ride."

*Second Prize.*—A. C. Ellis (Highgate). A portrait of a horse with a dog on his back, "Punch and his Rider Jack."

*Third Prize.*—A. B. Knight (Haileybury). A pretty landscape, with cattle in the foreground, "Animals, Dorking."

### CLASS IV.—ARCHITECTURE.

*First Prize.*—T. S. Cooper (Rossall). A very well chosen view of "Conway Castle."

*Second Prize.*—C. A. Brightman (Bristol). An admirable photograph of "The Cloisters, Gloucester Cathedral."

*Third Prize.*—A. S. Cachemaille (Oldham). Photograph showing the "Interior of Oldham Church, looking West."

The photographs will be on exhibit at our offices from Monday the 29th inst., to Tuesday the 7th of July; after which date the whole of the prints will be loaned to schools, carriage to be paid one way, a packing fee of one shilling with each application. At least two optional dates must be given when applying for the loan of the photographs.

The next boys' competition will be open to *all comers under seventeen, whether at school or not*; the date for photographs to be received is fixed for the 8th of October.

We would thank masters of schools who have taken such an interest in this "Boys' Competition," and we only hope that in our next competition we may have even better work and more competitors. The "boys" will have something to do during the holidays. No doubt the day is not far distant when we may promote a competition for "our girls," who will run the boys hard, especially in the selection of subject.

Some of the photographs show carelessness in development of the negative and in the operations of printing and mounting, but all go to prove that boys under seventeen are fully alive to the beauties of Nature and the usefulness of photography.

NEXT week's issue will commence Vol. XIV. of the AMATEUR PHOTOGRAPHER. Two new features will be commenced, *i.e.*, an illustration will be given every week, and a series of useful articles entitled "Photographic Procedure for the Amateur Photographer," by E. J. Wall, the author



of the "Dictionary of Photography." These articles will form a complete vade-mecum for the photographer, and will be of great service to those just taking up photography, and most handy for reference by all practising the art. We have every confidence that they will be more popular than any "guide to photography" yet published.

It has been again suggested that we should publish "Holiday Resorts and Photographic Haunts" in book form. This has often been under consideration, but we have felt that at present the ground has not been sufficiently covered. More particularly is this the case with reference to "Rambles with the Camera" in the outskirts of London and many of the large provincial towns. We would ask our subscribers to look down the "Tourist Index" published in the AMATEUR PHOTOGRAPHER, and help us by sending in MSS. to make it more complete. We shall then be able to take seriously into consideration the question of publishing "Holiday Resorts and Photographic Haunts" in book form. Many members of our larger photographic societies have taken part in excursions, and could prepare short articles of from 500 to 1,000 words, which would help us very much, and they would in addition earn the gratitude of their fellow-workers.

We are pleased to note that the Council of the Society of Arts have awarded Messrs. A. G. Green, C. F. Cross, and E. J. Bevan the Society's silver medal for the paper contributed by them on "Photography in Aniline Dyes."

THE Quarterly Examinations will be discontinued until the 1st of October. We find that few of the students can give up time during the summer months for examination work. We shall hope to be able to publish a syllabus for the term, so that those entering may have more time to prepare their answers and to carry out the practical part of the examinations.

It is most gratifying to us to find photographs from Melbourne, King William's Town, Cape Colony, and Assam entered for the AMATEUR PHOTOGRAPHER Monthly Competition, July 1st, "Out-of-door Figure Subjects, Groups, etc." These entries prove how wide is the interest taken in our competitions, and we are sure that many appreciate very much the criticisms in the *Photographic Reporter*. The competitor from Melbourne writes:—"I have now been following up photography for three years, and take great interest in anything appertaining to the same."

We would remind our readers that one of the most successful monthly competitions we ever had was the "Hayfield." This year the competition is fixed for the 1st of August, and we hope many scores of our readers will send in photographs of scenes in the hayfield. In many parts hay is now being cut, so we throw out a hint not to forget the "Hayfield" competition.

VERY shortly we shall hope to publish a critique upon the photographs at the Vienna Exhibition. Our contemporaries have all been supplied, and have published an article upon the exhibition, sent them by the direction of the "Club der Amateur Photographen in Wien." This circular article was not sent to us, nor had we been favoured with a copy of the catalogue until this week, when a subscriber was good enough to forward one to us. From a rather close perusal of it we find "our familiar friends" figure well. Hardly any new work seems to have been sent from England, and we note that out of some 170 to 180

exhibitors the United Kingdom contribute 55, who sent 176 pictures. Mr. George Davison has the premier show with 18; Mr. H. P. Robinson, 14; Mr. F. M. Sutcliffe, 12; Mr. Harry Tolley, 11; Mr. Lyd. Sawyer, 8. It will be seen that these five exhibitors contribute more than one-third of the pictures sent from this country. We are, of course, anxious to know from independent sources how the English work compares with the Austrian, which, we understand, is not infrequently assisted by professional photographers.

We do hope that the time will come when the Camera Club may see their way to invite photographers to contribute to a photographic exhibition in which all the work shall be new, and which may be conducted upon the lines of, say, the Royal Academy or any other of the greater annual picture exhibitions, and where the rule of selection shall be strictly adhered to. It appears to us that at Vienna the rule of reputation has been chiefly acted upon; it would at least be interesting to know whose photographs were refused by the "jury of selection," and an exhibition of the rejected English photographs might teach us "terrible things."

THE "Index to Standard Photographs, etc.," ably edited by Mr. H. Snowden Ward, and issued by the *Review of Reviews*, has run well-nigh through the second edition. We understand that the *Review of Reviews* will, commencing July, devote a page monthly to an index of the artistic, scientific, and educational photographs published during the month.

THOUSANDS of our readers have had the opportunity of seeing the AMATEUR PHOTOGRAPHER 1890 Prize Slides. We shall be grateful to any who may be able to offer us suggestions as to the framing of conditions for the 1891 Competition. We particularly wish competitors to keep in view the public exhibition of the prize slides. The more interesting the different series are made, the more is photography benefited, and the more popular will it become. We shall have four classes, give four prizes in each class (gold, silver, and bronze medal, and certificate), each competitor will have to contribute ten slides, and will be at liberty to enter only *one class*. It is in fixing the subjects of the four classes that we want suggestions, and trust that many will have something to say on the matter.

In connection with the Seventh International Congress of Hygiene and Demography, to be held in August, Mr. Andrew Pringle calls our attention to Section II., Bacteriology. It is proposed to make a special feature of photography as applied to bacteriological research. The following exhibits are suggested:—

- "Photo-micrographs, preferably unframed.
- "Lantern slides or transparencies.
- "Photographs of patients or parts affected with diseases known or supposed to be due to micro-organisms.
- "Photo-micrographic apparatus complete; or parts of the same intended for illumination, as lamps, heliostats, condensers, liquid-cells; also objectives, etc., etc."

Lantern slides will be projected on the screen at intervals by means of the optical lantern.

Communications respecting the photographic department are to be made to Mr. Andrew Pringle, Cromwell House, Bexley Heath, Kent.

Intending exhibitors are requested to give notice to Mr. Pringle not later than July 15th. All exhibits will have to be delivered at the University of London, Burlington House, not later than August 1st.



Many of our readers are doubtless interested in bacteriology, and may be glad of the foregoing information.

The London *Figaro* is responsible for the following:—  
“The Grand Duke Michael, disdaining, it is said, to live upon his wife's relatives, has resolved to turn to the camera as a means of gaining his livelihood. Here is a chance then for rich snobs. To be photographed by a Royal Archduke will be well-nigh as pleasant an experience, and a much cheaper one, as being painted by an R.A.”

MR. NELSON K. CHERRILL, well known in photographic circles as an authority upon enamels, has written a long letter to a recent number of the *English Mechanic* on “Some Proposed Improvements in Cameras of the ‘Tourist’ Type,” in which he hits out rather strongly at the “average camera maker” and his camera, and proposes a substitute for the wood and brass arrangement, which is certainly novel. Mr. Cherrill says:

“It would be out of place to stop here to write a treatise on ‘What to photograph, and how to select it;’ but I think all the best masters of the art will bear me out in this, that the selection *must* be made quietly and deliberately on the lines of definite rules of art, and from Nature itself, and not from an inverted image seen with a blanket tied round one's head.”

The writer goes on to bring forward some arguments in favour of the abolition of the focussing screen, and says:

“The determination of the exact point at which a landscape should be in focus is not so difficult or delicate a matter as the like determination with a portrait, chiefly because of the vastly superior depth of focus of landscape lenses.”

The italics are ours, as we were under the impression that depth of focus was dependent on ratio aperture, and not the style of lens. However, Mr. Cherrill gives us his ideas of a camera in the following words:—

“Would not half a dozen or so of fine steel knitting needles, suitably fixed, form an ample support, and as rigid as need be to connect these two (the plate and lens) together?—and, I think, if you consider that the lens only weighs a few ounces, and that the breaking strain of the needles would be some tons, it can only be a question of a little comparatively simple engineering to secure a rigid support from such slight means.”

Mr. Cherrill gives working drawings of his proposed camera, and possibly such a camera might find favour in the eyes of some, but when we consider that the larger size lenses—for instance, a whole-plate or 10 by 8, will weigh from 20 to 30 ounces, one necessarily begins to question whether the knitting-needle camera will not bend and quiver very much with such a weight attached. Those of our readers, however, who are desirous of making a small light camera should refer to the original letter, which will be found on pp. 316-318 of the *English Mechanic* for June 5th.

A writer in the *Birmingham Daily Gazette* deals with the forthcoming Photographic Convention at Bath, which, by the bye, there is every reason to believe will be a great success; he is also kind enough to say:—“They have magazines of their own in which their excellent work is described or reproduced, and we observe in the current number of the *Photographic Reporter* that a local amateur, Mr. W. G. Perry, has achieved some distinction in obtaining a charming picture of the “River Ouvry, Shropshire.”

Then follow a few remarks upon the vexed question of amateur and professional which are sufficiently interesting to reproduce here:—

“The question arises—What will the professional photographer do as the amateur advances in his art? That question need not cause any great alarm. To begin with, the amateur who makes photography his amusement will never degrade himself by competing with the man who makes photography his trade. It seldom happens that the amateur's pictures are worth purchasing by the public, and even if they were that public would necessarily

be limited to his circle of friends. But there is really a very effectual safeguard against an incursion upon the professional's domains. Up to a certain point photography is simple and cheap. Beyond that point it becomes complicated and expensive. The professional, sure of his results and certain of compensation, can devote time and money to perfection. Only a comparatively small number of the immense tribe of amateurs will give themselves the extra trouble to master the business, and only a still smaller number will venture on the increased expense. Those who can afford the money to expend upon a pastime are not likely to compete with the professional for money; and the few who may do so, after all, will only form that addition to the professional ranks which must be expected. On the other hand, the efforts of the amateurs indubitably have the effect of stimulating the professionals to produce their best work. The latter cannot afford to be equalled, and they will labour to excel. Day by day better methods are contrived and superior results are attained, and we must regard the immense advance in higher-class photography as due in no small measure to the impetus which comes from those in the lower ranks.”

WE are told there is an opening for a limited number of members to start a new postal club titled the Scottish Postal Photographic Club. There are many similar clubs flourishing in England, doing useful work, but this is the first attempt across the border, and will be run on entirely new lines. In addition to the usual discussion, criticisms, etc., by the members, arrangements have been made with a professional of high standing to criticise the prints every month, and a selection of the most suitable prints will be mounted in albums and presented to the various hospitals in Scotland, as decided upon by the members. The Hon Secretary, Mr. John Milne, 4, Devanha Terrace, Aberdeen, will be glad to hear from intending members. Specimen prints must be sent.

#### COPYING—BLACK AND WHITE.

THE reproduction of black and white designs, diagrams, or chalk drawings is a work often required to be done by amateurs, and very frequently the results they obtain are far from satisfactory. In the following notes we do not intend to give precise definite instructions for exposure, because that is almost an impossibility, and one or two trials will immediately give more information than a page of our notes.

The subject to be copied should be pinned or otherwise fastened as flat as possible. If a diagram from a book is required, the leaf bearing the figure should be placed behind an old negative glass and clipped to it by two or more broad indiarubber bands so as to keep it as flat as possible. If a loose drawing or sheet, then it can easily be kept flat by being placed behind an old negative glass or sheet of plate in a printing frame. The diagram or sketch thus mounted should be hung squarely in front of a window, and the camera placed opposite to it. Side lighting should be avoided, or any grain in the paper may show; in fact, if full front lighting cannot be obtained, it is preferable to work by artificial light, using a lamp at equal distances on each side.

The distance from the subject to lens and from lens to focussing screen is determined by the amount of reduction, or, in other words, the size of the copy as compared to the original. The necessary distance can be found in most handbooks and annuals, in the table of enlargements and reductions, or they may be easily calculated from the following simple rules:—To find the distance from lens to focussing screen: Divide the number of times of reduction plus 1 by the number of times of reduction, and multiply by the focus of the lens. To find the distance from lens to subject: Add 1 to the number of times of reduction, and multiply by the focal length of lens. Examples: A subject 12 in. long is to be copied, the reproduction is to be 3 in. long, the lens we are using is of 8 in. equivalent focus;



then the amount of reduction is obviously from 12 to 3, or the subject is to be reduced four times,—

$$[4 + 1] \div 4 \times 8 = 5 \div 4 \times 8 = \frac{5}{4} \times 8 = 10,$$

and  $4 + 1 \times 8 = 40$ .

The distance from lens to subject is 40 in., and the distance from lens to screen 10 in.

Having sharply focussed, the next important point is what diaphragm to use. This can only be determined by examination of the focussing screen. And it is advisable to examine the marginal definition with a compound focuser, inserting smaller diaphragms if this is defective; but as large an aperture as possible should be used.

The next important question to decide is the dry plate to be used. That is a point on which a good deal depends; in fact, with anything but the right brand success is all but impossible. There are one or two plates in the market which have been introduced under the name of "photo-mechanical plates," specially for such work, but we have used with perfect results a plate which most amateurs have by them, or can, at least, obtain without any difficulty, and that is the ordinary bromide lantern plate. The chloride plate is useless for this work, and the chloro-bromide plate does not give such good results as the ordinary lantern plate.  $3\frac{1}{2} \times 3\frac{1}{2}$  is, for book work, a convenient size too, as the resulting negatives give a decent sized diagram. Where, of course, the reproduction is required larger than this, a larger plate can be easily obtained from the manufacturer or dealer.

We have already stated at the commencement of this article that it was not our intention to give definite instructions as to exposure, but, as a guide, we may state that, desiring to have a faithful copy of an intricate diagram, we have this week exposed a lantern plate on a black and white subject, reducing it to one-third the size with a 9 in. focus lens, and, working under the conditions above-named, with  $f/18$  aperture, we found 75 secs. ample exposure.

Development may be effected with pyro or hydroquinone. Ferrous oxalate is utterly useless, and so far we have been unable to obtain such fine results with eikonogen as with the two first-named agents. Before giving the formulæ for these developers, we must clearly define what we want. The main point is, absolute clear glass in the lines of the diagram, and if we can obtain it absolute, opacity in the ground, or in other words, the whites of the paper, must be represented by as dense a deposit as possible; still, the main point, and the one we must never lose sight of, is absolute clear glass in the lines representing the lines of the diagram.

The number of formulæ for the pyro developers for this work are, like that of all other formulæ, almost illimitable. We shall content ourselves with two only, that we can recommend from actual experience:—

#### MAWSON AND SWAN'S DEVELOPER.

(A)

Pyrogallol .. ..	60 grains.
Potash metabisulphite .. ..	60 "
Ammonium bromide .. ..	60 "
Distilled water .. ..	20 oz.

(B)

Liq. ammon. '880 .. ..	2½ drachms.
Distilled water .. ..	20 oz.

For use, mix in equal parts.

#### EDWARDS' REDEVELOPER.

(A)

Pyrogallol .. ..	64 grains.
Citrate of ammonia .. ..	20 "
Or Citric acid .. ..	15 "
Distilled water .. ..	4 oz.

(B)

Liq. ammon. '880 .. ..	2 drachms.
Ammonium bromide .. ..	180 grains.
Distilled water .. ..	4 oz.

For use, mix in equal parts.

It will be seen that the two formulæ differ widely in strength, yet both give fine results. Of the two, we have a leaning to the latter, though slightly more wasteful than the former.

For hydroquinone we also give two tried friends:—

#### ENGLAND'S DEVELOPER.

(A)

Hydroquinone .. ..	150 grains.
Sodium sulphite .. ..	480 "
Potassium bromide .. ..	20 "
Distilled water .. ..	to 20 oz.

(B)

Carbonate of soda .. ..	2 oz.
Carbonate of potash .. ..	2 "
Distilled water .. ..	to 20 "

For use, mix in equal parts.

#### WILKINSON'S FORMULA.

(A)

Hydroquinone .. ..	80 grains.
Meta-bisulphite of potash .. ..	120 "
Bromide of potash .. ..	5 "
Distilled water .. ..	20 oz.

(B)

Caustic potash .. ..	200 grains.
Distilled water .. ..	20 oz.

For use, mix in equal parts.

The latter of these two formulæ is the quicker in action.

The actual details of development are practically the same as usual. The plate should be dusted, placed in the dish, and flooded with the developer, the finger passed over it to remove air bells, and development allowed to proceed, bearing in mind that clear glass lines are required; if there is the slightest sign of any line clogging up or fogging, instantly wash off the developer and fix. When the plate is thoroughly fixed, and not before, take it out into daylight and examine. If the lines show perfectly clear, but density in the ground is wanting, intensification will soon set this right, but if the lines show any sign of deposit, we may either resort to reduction or expose a fresh plate.

After having well washed the negative, it should be cleared with the ordinary acid alum bath, or with Edwards' iron and alum clearing bath, and we can now decide to intensify or reduce as we think necessary. If the former is considered necessary, Monckhoven's silver cyanide intensifier will give good results, provided the negative is absolutely free from hypo, and to ensure this it is advisable to use a simple eliminator like hydrogen peroxide or a few drops of tincture of iodine, then after well washing the negative it may be bleached in the mercuric chloride solution, well washed for at least half an hour, and blackened in the cyanide solution, and again well washed. If any lines show a deposit, it is advisable to resort to the process of reduction, and Belitzki's reducer first applied and the negative well washed, and then intensification proceeded with.

A negative thus prepared should give prints on bromide paper quite equal in sharpness of drawing and whiteness of ground to the original, and such a negative may be used for photo-mechanical work, or for the reproduction of the diagram by any of the iron printing processes with excellent results. The question of stripping and reversing the film, we shall treat of in a future article, and we must also defer our notes on the iron or other printing processes used for reproducing plans, diagrams, etc.



## Letters to the Editor.

### IS PHOTOGRAPHY A FINE ART?

SIR,—Mr. Pennell's paper, recently read at the Conference, and the various observations since made upon it, draw attention to the most interesting characteristic of photography. There is no doubt that "light draughtsmen" do not pay sufficient attention to the artistic character of their works. When the art was in its infancy—when the scope and limitations of lenses, developers, and illuminating media were scarce understood—the operator who could turn out a series of clear negatives was looked upon as little less than a genius. But now, when all this is changed for the better, we begin to expect to find in our photographs some of the grace and charm which other artistic processes have accustomed us to. The fatal mistake of Mr. Pennell's contention is that neither he nor any one else can define with any exactness what is and what is not fine art, for the very simple reason that fine art depends entirely for its acceptance upon the sensorial capacity of its beholders, and whilst one person can differentiate two delicate tints of colour, another is colour-blind, thus proving that no two people see alike, and that what is beautiful to one is gross ugliness to another, a truth which everyone can see demonstrated in the so-called "types of English beauty" now exhibiting in the shop windows. Perhaps, as an approximation to an art definition, one might say that it is a *beautiful portrayal of a noble sentiment*. Photographers have advanced as far as the beautiful portrayal, and it now remains for them to pervade their works with idyllic grace, and instead of being content with clean and vigorous rescripts of natural scenery, so to compose its beautiful elements as to make them express the pathos of a tender sentiment. Unfortunately, the term composition suggests to the ordinary mind an elaborate piece of arrangement such as Wilkie's "Blind Fiddler" or Maclise's Play Scene from "Hamlet," but an ideal picture may be composed of much simpler elements than these. A little weeping child holding a dead pet bird, and entitled "Infant Sorrows," a poor ill-clad man, turning out his pockets, and entitled "No Effects"—both of them, with a suitable landscape background, give an idea of the sort of materials which form the staple of pictures exhibited at the Royal Academy and elsewhere. "Love at First Sight," by Marcus Stone, in this year's show, consists simply of a girl in a garden seated in the foreground, with two figures in the distance, one a young man looking back. "A Passing Cloud," the same two figures, the girl standing leaning upon a gate pier in the foreground whilst the young lover is seated moodily in the distance of the garden; or "An Enigma," two figures seated on a sofa in a drawing room, the young man looking sideways at the young lady, whose head is turned slightly away—what could be simpler? Materials such as these are to be found in every household. And yet with such simple examples before them photographers go on producing works which exhibit no sentiment nor the slightest amount of pathetic interest whatever. Can we wonder then at Mr. Pennell's saying "Photography is not fine art, nor ever can be"?—Yours, etc.,

FRED. DAVIS.

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### PERSPECTIVE DRAWING AND VISION.

SIR,—Messrs. Emerson and Goodall, in drawing attention to and in emphasising certain hypothetical differences between the image transmitted by the crystalline lens of the eye, and that which is formed by a glass lens, have brought forward several points which no doubt seem to explain why some scenes which appeal to the eye are apt to develop deficiencies when turned into prints.

My object in writing is neither to combat nor corroborate the "propositions, proofs, or deductions" included in "Notes on Perspective Drawing and Vision," although as regards proposition A, at all events, my own personal observation makes me inclined to agree with the authors; but what I desire to do is to admonish the ordinary rank and file not to be discouraged by the prominence given to the more or less problematical defects which are moreover dwelt upon.

Let me remind all and sundry that the faults, such as they are, have existed from the beginning, and all that is now being done is to theorise upon their cause, which may eventuate in the removal of this microscopic mote from the eye of our camera. Not so long ago we heard a good deal about false tones in landscape studies, with the result that, so far from this being found

to be an inherent and incurable blemish, by the judicious employment of photographic chemistry and of optics, the fault was all but completely remedied. That prints are still seen with a grossly false relationship of tone is mainly due to ignorance and want of appreciation on the part of the worker, rather than to any great lack of perfection in the apparatus or processes. And so with this latest of incurable diseases which photography has from time to time been found to suffer from. Depend upon it that if there be any demand for the magnification of our distances, or for turning parallel sided towers into inverted truncated pyramids, means will be found for doing so. Perhaps the resulting views will look all wrong, but what of that if we know them to be all right?—Yours, etc.,

H. MACLEAN.

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### AN EXPLANATION.

SIR,—I note your observations anent my concluding article entitled "Photography as a Recreation for Ladies" in this journal, and in fairness to myself crave a little space for an explanation.

I was out of town when the article in question was set up, and, therefore, had no opportunities of revising the proof; hence the mistakes that you so generously point out.

The fixing bath should have read:—

Hyposulphite of soda	..	..	..	5 ozs.
Liq. am.	..	..	..	2 drms.
Water	..	..	..	30 oz.

Unfortunately, my wretched caligraphy led the ingenious compositor to transpose the cypher, with the result quoted. The other errors would not have crept in had I seen the proof. No one regrets the occurrence more than myself, but even you, Mr. Editor, cannot be entirely unacquainted with the eccentricities of printers and their subtle humour.—Yours truly,

SOL.

Lady Office, Bedford Street, W.C.

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### GLASGOW INTERNATIONAL EXHIBITION.

SIR,—I have pleasure in announcing that the following gentlemen have kindly consented to act as Judges at this Exhibition. There are three photographers and two painters, namely, Messrs. Valentine Blanchard, Adam Diston, Richard Keene, Francis Powell, Pres. R.S.W., and William Young, R.S.W.

I hope shortly to name two gentlemen with a special knowledge of photo-mechanical work, who will assist the others in that section.

There is a slight error in our prospectus which may lead to some misunderstanding. In the clauses at the head of the list of classes, "Class 24 (Scientific) may be, etc.," should read, "Class 25 (Scientific) may be, etc."

I beg to confirm the arrangement already announced by the Cardiff Executive, whereby pictures entered for both exhibitions can be sent on here, carriage paid.—I am, etc.,

WM. GOODWIN (Hon. Sec.)

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### EXHIBITION AT THE CAMERA CLUB.

SIR,—Will you kindly allow me to state that the Exhibition of photographs by the Marquis D. Vianna de Luna, and the Countess Loredana da Porto Bonin, which was announced to be opened at the Camera Club on Tuesday, June 25th, is unavoidably postponed.

The Exhibition will commence on Thursday, July 16th, after which date the pictures will be open to inspection by visitors under the usual conditions, namely, from 10 a.m. to 4 p.m. on production of tickets, which may be obtained from the Hon. Sec. and from members generally.—I am, etc.,

G. DAVISON (Hon. Sec.)

Camera Club, Charing Cross Road, W.C.,  
June 20, 1890.



**Pyrogallic Acid.**—The *Glasgow Evening News* says: "Seeing how fashionable photography still is, it may be well to publish the details of a sad accident which tends to show the danger that lurks in the developing cup. A well-known photographer of Baltimore has lately met his death by mistaking, in the dim light of his dark-room, a solution of pyrogallic acid for a glass of whisky and water. He knew too well the danger he was in, and he took a powerful emetic without delay, but the virulent poison had entered too far into his system, and in three days he was a corpse."



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

### CHAPTER XII.

FIG. 27 is a sketch of Wilkie's admirable composition of the Blind Fiddler. I shall leave it to the student's own judgment to investigate the various forms on which this composition depends.

By making the principal heads depend upon one mode of arrangement, the general appearance of the group on a different mode, the background on a third, and so on with the minor points (provided they all tend to the assistance of

which to a cultivated mind increases (not diminishes) by the investigation of the cause which produces it. For example, a beautiful appearance in nature affects the savage and the philosopher from their sensations merely as men; but a painter, whose life is spent in a constant competition with nature in producing the same effects, receives a tenfold gratification in following her through those assemblages which to the world beside are, as it were, "a fountain sealed and a book shut up." Hence, in art, a beautiful arrangement must be a selection of those forms, lights, and colours that produce a similar result; and the taste of an artist is shown in heightening their effect by the absence of those circumstances which are found by experience to produce the contrary. Did an investigation of the means pursued by the great masters tend to abridge an artist's pleasurable sensations, instead of being the most favoured, he would be rendered

the most miserable of beings: but the opposite is the case, as by such means he is taught an alphabet that enables him to understand the language of nature. It may be supposed that, in my search after so desirable an object, I have perused all the works written to define Beauty and Taste, and which endeavour to circumscribe with a line that endless variety and omnipresence which make nature a source of gratification to all nations under every alteration of the mind; but as I wish to avoid all controversy on the subject, which we often find merely renders the most sublime truths more obscure, I shall only remark that, as far



FIG. 27.—WILKIE.

one another), his composition will not only have intricacy without confusion, but that variety which is so characteristic in nature. A beautiful combination in nature will often appear to evade every rule, by her being perfect in every mode of examination. All her varieties emanate from a straight line and a curve. A judicious arrangement of objects possessing these various forms gives the strongest natural appearance to a picture; nor ought the artist to leave out rashly what he may conceive to be void of beauty. In colouring, harsh tints are admitted to produce harmony in the other colours; and the most picturesque arrangements often depend on the presence of what might be otherwise considered ugly forms.

As I have made use of the terms "beautiful and agreeable arrangements," it is proper to give an explanation of the sense in which they are applied. By a beautiful arrangement, I mean a proper adaptation of those principles that arrest a common observer, and give a pleasurable sensation,

as painting is concerned, the authors of many of these works have done an irreparable injury. Artists generally prefer the opinions of untutored children to the remarks of the most learned philosophers, whose advancement in other sciences really seems to increase their ignorance of this. If I have explained my definition of the terms sufficiently for the artist's comprehension, I am satisfied. To explain them to others would be equally impossible as that those others should be able to define them to us. The mind must have received its education through the medium of the eye, not of the ear, to enjoy the faculty of conceiving such ideas, or the power of tracing them to their original source in nature, or in art, as a test of their truth.

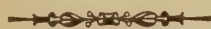
Before I conclude, I have to apologise for the paucity and brevity of these observations, and beg the reader's constant reference to the plates, as the only method of making myself correctly understood. Painting is a practical branch of philosophy, and can only be rendered clear by



satisfying the observations of the eye, as well as the reflections of the mind; this, perhaps, is one reason why so much has been written on the subject without those truths being made sufficiently obvious which the writers wished to demonstrate.

I have also been anxious to avoid tautology, as it will be necessary to go over, in a great measure, the same ground, when I come to treat of light and shade; when many observations which appear to be omitted here will present themselves, from belonging more properly to that division of the work.

I must also caution the young artist against supposing that these modes of arrangement are given for his imitation; I merely wish him to be acquainted with the advantages any particular composition possesses, that in adopting any invention of his own, he may engraft upon it those or similar advantages. A design that has nothing but novelty to recommend it is a conceit, not a composition. The student in painting can hope to derive advantage from theory only, when rendered obvious by ocular demonstration. One great cause of the obscurity which envelops the art is the criticism of those whose ideas on the subject are obscure;—to free the world from their influence is perhaps impossible; but the artist must free himself.



## Chemistry for Photographers.

By C. H. BOTHAMLEY, F.I.C., F.C.S.

(Continued from page 372.)

BROMINE is obtained in the free state in the same way as chlorine, namely, by heating a bromide with manganese dioxide and sulphuric acid.

EXPERIMENT 142.—Grind together carefully 5 grammes of potassium bromide and 10 grammes of manganese dioxide; put the mixture in a small retort connected with a receiver, as in fig. 23; add 10 c.c. of sulphuric acid previously diluted with half its volume of water, and allowed to cool, and shake until the contents of the retort are thoroughly mixed. Now heat gently, keeping the receiver carefully cooled, and the bromine will distil over as a dark red oily liquid,  $2\text{KBr} + \text{MnO}_2 + 2\text{H}_2\text{SO}_4 = \text{Br}_2 + 2\text{H}_2\text{O} + \text{K}_2\text{SO}_4 + \text{MnSO}_4$ .

N.B. If you are not able to perform this experiment in a proper draught-chamber or out of doors, use a test tube and very small quantities of the substances. In this case you cannot condense the liquid in another vessel, but observe the colour of the vapour and the oily drops that form on the cold upper portion of the tube.

Bromine is a heavy dark red liquid, intensely corrosive and with great chemical activity. It is very volatile, giving off large quantities of vapour at the ordinary temperature, and it boils at  $63^\circ\text{C}$ . The vapour is most irritating, even when mixed with large quantities of air; it combines directly, like chlorine, with phosphorus, and with many metals. Bromine is somewhat soluble in water, and the solution, which is known as *bromine water*, has the colour, smell, and many of the properties of the liquid. When exposed to light, it alters much more slowly than chlorine water under the same conditions. Bromine is much more soluble in ether, carbon bisulphide, or a solution of potassium bromide than in pure water.

Hydrogen bromide is liberated by the action of strong sulphuric acid on bromides, but is always mixed with some free bromine.

EXPERIMENT 143.—Put a small quantity of solid ammonium or potassium bromide in a test tube, and add to it some strong sulphuric acid; dense white acid fumes of

hydrogen bromide are given, accompanied after a very short time by orange-red fumes of free bromine. The liberation of the hydrogen bromide takes place in the same way as the liberation of hydrogen chloride (Expt. 126),  $\text{KBr} + \text{H}_2\text{SO}_4 = \text{HBr} + \text{KHSO}_4$ , and the liberation of bromine is due to a secondary reaction between the hydrogen bromide and the excess of sulphuric acid, thus,  $2\text{HBr} + \text{H}_2\text{SO}_4 = \text{Br}_2 + 2\text{H}_2\text{O} + \text{SO}_2$ .

Pure hydrogen bromide is obtained by the action of bromine on phosphorus and water, thus  $\text{Br}_2 + \text{P} + 4\text{H}_2\text{O} = 5\text{HBr} + \text{H}_3\text{PO}_4$ . The gas is very similar to hydrogen chloride, but is more readily decomposed by heat and by the action of any substance that will combine with either the hydrogen or the bromine, because the attraction of the bromine and hydrogen for one another is weaker than the attraction between chlorine and hydrogen. The gas dissolves readily in water, forming hydrobromic acid, which is very similar to hydrochloric acid in all its properties. If a strong solution of the acid is exposed to light in presence of air, a small quantity of free bromine is liberated, and it acquires a slight orange colour. Hydrobromic acid attacks many metals, and with them, or with metallic oxides and hydroxides it yields the salts termed bromides, identical with those obtained by the direct combination of bromine with the metals.

The attraction of bromine for hydrogen makes it a useful oxidising agent. It will also bleach, but in both cases is less energetic than chlorine.

EXPERIMENT 144.—Repeat Expts. 138 and 139, using bromine water in place of chlorine; similar products will be obtained.

Iodine is obtained from iodides in the same way as chlorine or bromine from chlorides or bromides.

EXPERIMENT 145.—Grind 5 grammes of potassium iodide with 10 grammes of manganese dioxide, put the mixture in a porcelain dish, and add 10 c.c. of strong sulphuric acid. Cover the mixture with an inverted glass funnel, and heat with a small flame placed just under the middle of the dish, so that the funnel remains cool (fig. 27). Iodine is liberated, and forms a deep violet vapour which condenses on the sides of the funnel in dark grey metallic-looking hexagonal plates.  $2\text{KI} + \text{MnO}_2 + 2\text{H}_2\text{SO}_4 = \text{I}_2 + 2\text{H}_2\text{O} + \text{K}_2\text{SO}_4 + \text{MnSO}_4$ .

Iodine is only very slightly soluble in water, but it dissolves more readily in alcohol, ether, carbon bisulphide, or an aqueous solution of potassium iodide. Confirm these statements by shaking crystals of iodine in small test-tubes with small quantities of each of these liquids. Iodine melts at  $115^\circ\text{C}$ , and boils at above  $200^\circ$ , giving a deep violet vapour, which is 127 times heavier than an equal volume of hydrogen, and nearly 8.8 times heavier than air. The solid and its solutions stain the skin yellow, and also act rapidly on other forms of organic matter. Iodine combines directly with phosphorus and with a certain number of metals, but its chemical activity is considerably less than that of bromine. Its characteristic property is its power of forming with starch a compound which has a very intense blue colour.

EXPERIMENT 146.—To some fresh starch paste add a very small quantity of a solution of iodine in alcohol or in potassium iodide solution; a deep blue, almost black colouration will be produced. Heat the liquid nearly to boiling, and the colour disappears, but returns as the liquid cools.

This property belongs only to free iodine, and not to iodine in combination.

EXPERIMENT 147.—To some starch paste add some solution of potassium iodide; no colour appears, because the

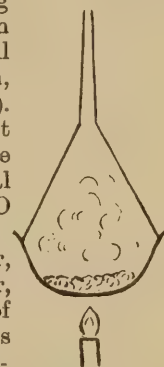


FIG. 27.



iodine is combined with potassium. Now add a small quantity of chlorine water or bromine water, and the colour instantly appears, because the chlorine or bromine combines with the potassium and sets free the iodine, which at once combines with the starch.

Iodine, like fluorine, chlorine, and bromine, forms only one compound with hydrogen; the attraction between the two elements is feeble, and they will only combine directly under special conditions.

*Hydrogen Iodide*, HI, cannot be obtained by the action of sulphuric acid on iodides.

EXPERIMENT 148.—To a small quantity of solid potassium iodide in a test tube add some strong sulphuric acid; iodine will at once separate, an odour of sulphur dioxide or sulphuretted hydrogen will be perceived, and only a very small quantity of fumes of hydrogen iodide will be given off. The primary reaction, as with chlorides and bromides, is  $2KI + H_2SO_4 = 2HI + K_2SO_4$ , and the secondary reactions, which take place to a much greater extent than with bromides, are  $2HI + H_2SO_4 = 2H_2O + I_2 + SO_2$ , and  $3HI + H_2SO_4 = 4H_2O + 4I_2 + SH_2$ , according to the relative proportions of the reacting bodies.

Hydrogen iodide is obtained by heating together iodine, water, and red phosphorus:  $I_2 + P + 3H_2O = 5HI + H_3PO_4$ .

It is a heavy colourless acid gas, which fumes strongly in the air and dissolves very readily in water, forming *hydriodic acid*. Both in the gaseous state and in solution, it closely resembles hydrogen chloride and hydrogen bromide, but is much less stable, and when heated or exposed to light it splits up into hydrogen and iodine  $2HI = H_2 + I_2$ . This change takes place still more readily in presence of anything that can combine with hydrogen, and its great tendency to part with hydrogen makes hydrogen iodide (both gaseous and in solution) a very powerful reducing agent. Hydriodic acid attacks many metals, and dissolves carbonates and oxides, forming salts (iodides) that are identical with those obtained by the direct union of iodine with metals.

The chemical energy of the four elements fluorine (at. wt. = 19), chlorine (at. wt. = 35.5), bromine (at. wt. = 80), and iodine (at. wt. = 127), their tendency to combine with hydrogen and with metals, and the stability of the hydrogen iodides and other iodides, diminish as the atomic weight of the halogen increases. Fluorine is the most active, and, in fact, is the most energetic of all the elements; iodine is the least active of the four. Fluorine will displace chlorine, bromine, and iodine from their compounds; chlorine will displace bromine and iodine; bromine will displace iodine. This last sentence is true only when the displacing elements are in the free state; interaction between fluorides, chlorides, bromides, and iodides is governed partly by the nature of the metals with which the halogens are combined in the different cases.

EXPERIMENT 149.—To a solution of potassium or ammonium bromide add a small quantity of bromine water, then some carbon bisulphide, or ether, and shake; the chlorine expels the bromine, and the latter dissolves in the ether or carbon bisulphide, giving it an orange-red colour.  $KBr + Cl = KCl + Br$ .

EXPERIMENT 150.—Perform a similar experiment with potassium iodide solution, chlorine water, and carbon bisulphide; the chlorine displaces the iodine, and the latter dissolves in the carbon bisulphide, forming a violet solution:  $KI + Cl = KCl + I$ .

EXPERIMENT 151.—Perform a similar experiment with potassium iodide, bromine water and carbon bisulphide; the bromine displaces the iodine.  $KI + Br = KBr + I$ .

—◆◆◆◆◆—  
**Ourselves.**—An American lecturer writes: "The AMATEUR PHOTOGRAPHER always remains my most interesting reading."

## With a Camera in Austro-Hungary.

By THE YANKEE SUNFLOWER.

THE Editor of the AMATEUR PHOTOGRAPHER asks for notes on photographic tours. During the past twelve months my hand-camera has accompanied me among the fiords and glaciers of British Columbia—

By the tall minarets of pine,  
 And awful Shasta's icy shrine—

and all the way down the Pacific coast of Washington, Oregon, and California to the Mexican frontier, and then by the City of the Saints and the Garden of the Gods to Nova Scotia; and in this hemisphere as far east as the Carpathians and the Danube.

Which part shall I first describe? The American scenes are too far away for a summer holiday, and those of Western Europe are overdone, but within forty hours by rail from London are two cities on the Danube—Vienna and Budapesth—which, if my recent experience be any guide, offer to the amateur who has a fortnight to spare, more attractions than any other district that I have visited within an equally short distance from London.

For less than eight pounds a return second-class ticket may be purchased, giving the choice of several routes, each of which is so full of delightful scenery that I would advise the tourist so to arrange his journey that he sleeps in the hotels, and has the advantage of daylight for the whole journey. Having on previous visits to Europe tried every other route, I this time purchased a ticket *via* Harwich, Antwerp, Cologne, Frankfurt, Nuremberg, to Vienna, going by steamer down the Danube to Budapesth, thence northwards to Berlin and back *via* Rotterdam. Starting from Leeds, I found along the railway many tempting subjects for the hand-camera, especially about Ely. At Antwerp, where I found good entertainment and an English-speaking host in the Hotel d'Hollande, and every possible photographic facility in a neighbouring store, I had but little time to linger, while Mechlin and Brussels beckoned me onwards. From Cologne to Frankfurt the traveller has the choice of routes on either bank of the Rhine. In the early morning he will find the eastern bank, and from 11 a.m. till dusk the western bank most favourable for photographic shots, but if he is not in a hurry it is best to take the steamboat in preference to railroad all the way from Cologne to Mayence, and go thence per rail to Frankfurt on the Maine. Here the Electrical Exhibition was my chief inducement to linger. It was, however, but a beggarly array of empty boxes when I saw it, not half the exhibitors being ready. The captive balloon offered a splendid opportunity for bird's eye views. Thence by Offenbach, Hanau, Aschaffenburg to Nuremberg, till at Ratisbon we came within sight of the Danube, and at Passau we entered Austria. Here, as also on the Dutch and German frontiers, my stock of sensitive plates purchased in England was allowed to enter without question and without duty, and from this point to Vienna, all day long so many characteristic scenes offered themselves, that the great difficulty was to resist the temptation to expose too many plates. Of Vienna I had pleasant memories of bygone days, when in 1873 I spent five months at the international exhibition there, and though many a friendship then commenced had been interrupted by death, there were nevertheless enough old friends remaining to so monopolise my time that I had not a chance of *making* a single photograph, though I *took* several. While I could buy very few satisfactory views in the shops, I was fortunate enough to be able to exchange the lantern slides that I had made on



the Pacific Coast for admirable amateur work in the Alpine districts of Austria and Hungary.

Of course, I left my card with Mr. Srna (you pronounce the queerly-spelt name Sairnah), the Secretary of the very aristocratic Amateur Photographers' Club of Vienna, and within an hour my visit was returned by the President of this club, Mr. Ulrich himself, who not only conducted me through the interesting exhibit of artistic photographs, but also introduced me to several amateurs. I found the fact that I am a member of an American camera club a sufficient introduction everywhere, but nowhere did I meet with such extraordinary politeness and attention as in Vienna, both from the members of the photographic societies and from professors who use the camera principally as an aid to the study or the teaching of natural science.

The exhibition itself I have heard very sharply criticised, especially in Berlin; but having due regard to its object, I think it was very satisfactory. There was no question of processes or the use of the camera to correct the deficiencies of human vision. There was only one professional photographer on the jury; all his colleagues were artists, and the measure which they applied to their selection was that the photographer should represent nature (so far as the limitations of his instruments permit) just as the artist sees it. I am no artist, and therefore cannot presume to criticise their choice. Some of the very best productions of the recognised masters of landscape photography in England were there, but I cannot say that the Germans suffered by comparison with them. In one style, indeed (the genre pictures), the Vienna exhibits seemed decidedly superior to any that I have ever seen before, perhaps because they had such admirable models. The painters can in some measure correct the defects of his models. The photographer must take them with all faults, and I have hardly seen a single set picture in which the model, whether she be Mrs. James Brown Potter or the beefy females who are represented in a recent New York photographic annual—satisfied one's idea of artistic fitness. Here at least I found not a single instance of obtrusive bad taste. What I missed most of all was a description in the catalogue of the instruments and processes employed, which would have added much to the interest of the exhibition, and would have prevented some curious misunderstandings on the part of some professional photographers who judged the exhibits by the processes which they usually employ in the atelier. So, before two landscapes by Lyonel Clark, I heard a professional say that they were excessively retouched, yet the supposition that Mr. Clark had either put his lens out of the focus or used an uncorrected lens, or finally made the negatives without using a lens at all, seemed to be a sufficient reason for their appearance.

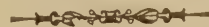
As on the Rhine, so on the Danube, I advise every photographer who has leisure, to use the steamboat in preference to the train. He will find on both rivers most beautiful views without the ugly foregrounds which are inseparable from the railroad. Pressure of business forced me on this occasion to use the night and the train. But while in Budapest, engaging one of those commissioners who are to be found at the corner of every street as guide and porter, I spent a few hours very profitably in photographing interesting street scenes in the sister cities of Pesth and Ofen. From Budapest to Berlin I had the choice of three routes, all very picturesque, and having in earlier days travelled by Prague and Dresden, and through the valley of the Waag, I took this time the less interesting route by Ruttek and Hatvan. In Berlin I was fortunate enough to meet both Dr. Vogel and Dr. Stolze. The latter, who is equally distinguished as photographer and

phonographer, induced me to stay a night longer than I had intended, to attend a meeting of the photographic society over which he presides, and here I heard a German variation of the arguments so often heard in England for photographic sharpness as against impressionist fuzziness, and met Dr. Bruno Meyer, the most successful maker of lantern slides in all Germany.

While travelling, I was induced, by the ingenuity of its construction and its extraordinarily low price, to purchase a stereoscopic hand-camera which could also be adapted to making lantern slides and to pictures 9 by 12 c.m. (say  $3\frac{1}{2}$  by 5 inches). I pulled it to pieces, and found that the two doublets were simply formed of two uncorrected or non-achromatic lenses, and there being no focusing glass the difference between the visual and optical focus of the lens is, of course, non-apparent to the purchaser. Nevertheless, the results which I obtained with this cheap little instrument, even when magnified by the Sciopicon, are quite equal to the best I have seen obtained by cameras costing three times the money.

On the whole, I had every reason to congratulate myself on having taken from England a stock of celluloid films, which, though more expensive than glass, were cheaper to me in actual use, because I could cut them with a knife to suit any size of dark slide, and I saved much in carriage and breakage, and could, whenever I chose, make a few test developments much more readily than with the continuous film used in the Kodak.

From Oderberg, *via* Berlin and Rotterdam, the journey is so uninteresting that it may well be made in the dark. For those who have plenty both of time and money the best route is *via* Antwerp and Luxembourg to Trèves, thence, by steamer, with an occasional tramp on foot, down the Moselle to Coblenz. Thence back to Bonn or Cologne and up the Rhine by steamer to Mayence, by rail, *via* Frankfurt and Nuremberg to Passau, then by steamer, in three days, to Budapest, halting at Linz and Vienna. From Budapest, a side trip to the Transylvanian Carpathians is well worth the trouble, and the return journey may be made either round by Fiume, Trieste, Innsbruck, and Munich, or through the valley of the Waag to Oderberg, and so on to Berlin. But this, to be properly enjoyed, would require several weeks, and for those whose time is limited, a return ticket to Vienna, costing less than eight pounds, and a steamboat run down the Danube to the capital of Hungary, will in themselves form a most enjoyable excursion.



## RETOUCHING.

*After Shakespeare (a long way).*

RETOUCH, or not retouch? that is the question,—  
Whether 'tis nearer to the truth to leave the  
Marks and wrinkles of approaching age,  
Or to take brush and pencil and retouch,  
And by disguising hide them? to spot, to shade,  
No more, and by some skill to say we end  
The heartaches and annoyances  
That sitters feel; 'tis a consummation  
Devoutly to be wished. To spot, to touch,  
Retouch, perchance to beautify—ay, there's the rub.  
For in retouching what youth restore,  
And shades and markings of old age destroy,  
Must give delight. There's the great skill  
That makes retouching so desirable;  
For who would bear the lines and freckles,  
Scars, pimples, and deep shadows,  
A twisted mouth, thick nose, and crooked eyes,  
With features all irregularly plain,  
When by the pencil's skilful power  
They might be beautiful for ever?



## The Picture Galleries.

### TWO BRILLIANT CONVERSAZIONI.

By "LOITERER."

BRAIN-LAND's inhabitants journeyed to the West last Wednesday evening. Before the carriages had rolled up to Buckingham Palace for the State concert there had been hundreds of arrivals at the South Kensington Museum, on the occasion of the *conversazione* given by the Council of the Society of Arts. Simultaneously, crowds of distinguished scientists, accompanied by intellectual ladies, were thronging Burlington House, where Sir William and Lady Thomson did the honours of the "Ladies' *Conversazione*" on behalf of the Royal Society.

Both functions were brilliant successes. Sir Richard Webster, Q.C., M.P., tried to forget that there was such a place as the House of Commons or such a legal conundrum as the Berkeley Peerage case. He received the guests of the Society of Arts with unfailing courtesy, and then put in an appearance at the State concert. Through the handsome halls of the South Kensington Museum the company passed to the North Court, where the band of the Grenadier Guards discoursed sweet music. Here we noticed Sir Philip Cunliffe Owen, Lord Bramwell—as great in science as in law, and happier in both than in the political arena—Sir Charles Lawson, Sir George Hayter Chubb, Sir Owen Tudor Burne, Sir Robert Rawlinson, Sir Henry Doulton, and many other distinguished gentlemen. Sir Henry Trueman Wood and Sir Frederick Abel, K.C.B.—the latter rejoicing in the latest addition of the Albert medal to his many honours—listened to the harmonies of the band, so ably conducted by Lieutenant Dan Godfrey. Sir Owen Roberts, Admiral Colomb, Mr. C. M. Kennedy, C.B., Mr. Charters White, Sir Rawson Rawson—these were among the brilliant throng. Ladies and gentlemen gazed at each other rather more than at the interesting contents of the cases in the Court, and then migrated to the lecture theatre, where samples of old English music were given, under the direction of Mr. Arnold Dolmetsch. When the strains of the lute and the harpsichord had ceased, the attractions of the Quadrangle led a multitude of hearers into the open air. Here the Scots Guards' band, under the baton of Mr. Edward Holland, rendered selections from the popular "Gondoliers" and various operas. The reflection of light from the surrounding Courts, the military costume of the band, the kaleidoscope of "fair women and brave men," added to the softened splendour of the summer evening, made the scene in the Quadrangle one of striking effect.

The company seemed to realise Guildenstern's idea of happiness in being happy, but not over happy. In the galleries, the Raphael cartoons were inspected with apparent pleasure, while the Sheepshanks collection and the Chantrey bequest each had admirers. Some striking costumes brightened the scene. Here a beautiful white dress trimmed with a chiffon of mauve attracted almost envious glances from the fair sex; there a charming harmony of dove-coloured silk with blue fichu; and everywhere bright faces showed the general delight.

At Burlington House there was the same fashionable crowd, but different exhibits. One saw Mrs. Henry Fawcett gazing at Prof. Silvanus Thompson's curious optical illusion. Parliament was represented by the Speaker of the House of Commons, Right Hon. Leonard Courtney, M.P., Sir Edward Clarke, Q.C., M.P., the Postmaster-General, and many others from St. Stephen's. Literature sent Mr. James Payn, Mr. Lewis Morris, Mrs. Oliphant, Mrs. Humphry Ward, and many other famous writers. Mr. H. M. Stanley was allowed a little more elbow room than last season; Sir Frederic Leighton, P.R.A., was quite at home in Burlington House. Judges in the persons of Sir Nathaniel Lindley, Mr. Justice Kay, Chief Justice Morris, and Baron Pollock, all seemed interested in the ingenious collection of curiosities. Mr. Edward Whymper sent some of the splendid engravings for his work "Travels among the Great Andes of the Equator." Meteorological photographs were lent by Mr. Arthur W. Clayden, and photographs of volcanic phenomena were exhibited by Dr. Tempest Anderson. A special feature was the connection by telephone with the Gaiety Theatre at Manchester.

The evening was well suited to its occupations, and thousands of persons returned to their homes more than satisfied with the entertainment provided by both the Royal Society and the Society of Arts.

## Notes from the Edinburgh Centre.

(From our own Correspondent.)

THAT hive of photographic activity, the Edinburgh University Photographic Society, met at No. 11, Chambers Street, Edinburgh, on the evening of Monday, 15th inst. Dr. Drinkwater, than whom a better President could not be found, occupied the chair, and, as became an energetic President, he showed the way by submitting for inspection a series of silver prints on which he had been experimenting. From an art point of view, he said the ordinary colour of silver photographs is objectionable, and he had endeavoured to produce a red tone, like the Bartolozzi. First he tried uranium, but it did not give the real Bartolozzi, and, besides, it was not permanent. He then tried a strong solution of common salt, and it produced, not the real Bartolozzi, but a tone as near it probably as silver was capable of giving. The way he worked it was this—the prints were turned over in the solution until they were thoroughly soaked, then they got one rinse in clear water and were at once put into a gold and borax solution. You would fancy they were hardly toning at all, while they were toning all the time. He used richly sensitised paper, and let them remain in the bath for about a quarter of an hour. The specimens shown by Dr. Drinkwater were a rich red tone, and certainly a great improvement upon any of the ordinary silver tones. He was highly complimented on the success of his experiment, particularly considering the simplicity of it.

### COLOUR-CORRECT PHOTOGRAPHY.

Dr. J. R. Paterson then made a communication on colour photography. They could, he said, produce a photograph in almost any single colour they pleased, but they were still striving to discover a process for the production of photographs in multi-colour. Dr. Paterson gave a narrative of the attempts to produce coloured photographs, and said it would be interesting to find out, from the records of the Patent Office, how many sanguine inventors had rashly rushed to expend their guineas in the full expectation that they had at last discovered colour photography. But in spite of all the progress that had then been made, a practical process of colour photography had still to be found. Two methods were usually employed, the one of which was chromo-photo-lithography, and the other worked by means of the lantern. Of chromo-photo-lithography, notwithstanding that a great deal had been written, little was known, some of the workers not having described their process. The principle of the process was the well-known one that sensitised gelatine, after exposure, took up a greasy ink, and several negatives were made of each picture, through tinted glasses which shut out certain of the colours, and from which the printing was done. Dr. Paterson showed, as produced by this process, the coloured picture which appeared in the *Photographic Quarterly* in the spring of last year. He described Albert and Vidal's process, and Obernetter's dusting-on process, and mentioned that of Hirsch, of Munich, by which similar results are obtained. Speaking of the lantern methods, he referred to the ingenious process of Ives, of Philadelphia, in which three differently tinted glasses are employed to produce different negatives, from which a positive is made. It was not a practicable process, the great difficulty being to get the colour balanced. Quite recently the Verak camera had been invented, which worked by means of four coloured glasses. A negative was made through each glass, and then, by different lenses, the four were focussed together on the screen. In the last place Dr. Paterson introduced M. Lippman's process, with which he had experimented. The process, he said, was based on principles that had long been known. There was no chance in the discovery of the process; it was all deduced logically from facts. The process was simple, but, unfortunately, it was only in an experimental stage, and was wholly unpractical outside the laboratory. Dr. Paterson explained how the plates are prepared, and he showed a plate which he had exposed under coloured glass. The result, he stated, of the exposure in Lippman's process was to produce a positive. The exposure required to be a very long one; M. Lippman said about an hour and a half on a very bright day. Dr. Paterson's specimen was looked upon with interest, and he was thanked for his communication.

**Dark-Room.**—Mr. John Piggott, who is nothing if not up to time, advises us that he has placed a "dark-room" at the disposal of amateur photographers at 117, Cheapside, E.C.



## Quarterly Examinations in Photography.

**Question 31.**—Write a brief note on the influence of development on gradation.

**ANSWER.**—This question is at the present moment the battlefield amongst those who are authorities in photographic matters.

Mr. Lyonel Clark first called attention to the amount of detail developable was always the same, the difference being in the time required by the different developers to produce it; but since then Messrs. Hurter and Driffield have published some of the results of a long series of experiments, showing that the amount of silver deposited is in ratio to exposure, no matter what developer is used, and hence they conclude the operator has no power to alter the gradation. This theory has started the battle, and seems to have been arrived at without due consideration, as it is in opposition to all previous experience, as the following experiment shows:—

A plate (the more rapid the better) is slightly over-exposed, cut into two, and developed, first half with pyro, 2 gr., bromide  $\frac{1}{2}$  gr., ammonia 3 minims, water 1 oz.; second half with pyro 2 grs., bromide  $\frac{1}{2}$  gr., ammonia  $\frac{1}{2}$  minim, water 1 oz.; both being developed until the same amount of detail in the shadows is visible (the second developer requiring a much longer time), and the prints resulting compared.

It will be found that the first print is flat, while the second is harsh with strong contrasts, the high lights being almost entirely blocked.

In a paper in the *Photographic Reporter* (I think for June) attention is called to the results found by M. Angerer, of Paris, as to the different densities given by different developers, while Professor Burton is responsible for the statement that pyro followed by eikonogen gives very different gradation to either of them alone, but that reversing the order has little or no effect.

S. N.

**Question 32.**—How would you restore a yellow albumen print?

**ANSWER.**—The first question is, in what stage is the print, and how has it become yellow?

(a) If yellow or discoloured from being kept too long before toning, they may be restored by being well washed in a bath of ammonia 2 per cent. and water, and the same amount of ammonia should be added to the fixing bath.

(b) If yellow from sulphur from an acid fixing bath, they are best destroyed, as the results are always unsatisfactory.

(c) If yellow from age, they may be bleached in a bath of—

Chloride of lime .....  $\frac{1}{4}$  lb.

Carbonate of soda .....  $\frac{1}{4}$  "

Water ..... 1 quart

until the print has regained its proper tint, when it required to be washed for some six hours in running water.

S. N.

**Question 33.**—Is there any difference in the resulting tint of a bromide print, when the paper is exposed at 2 ft. or 6 ft. from the source of light? How would you calculate the exposures required at the latter distance, that at the former being known?

**ANSWER.**—The answer to this question depends on two things: the light employed, and the negative. The slow action of light does give a very different tone to its rapid action, but when the lesser exposure is much prolonged, owing to the density of the negative or the dimness of the light, this difference is reduced to a minimum. Thus with a negative which requires at 2 ft. from a given light five seconds' exposure, a very different tone will be obtained by giving 45 secs. at 6 ft., or better still by giving 80 secs. at 8 ft.; but with a negative requiring 90 secs. at 2 ft., an exposure of 15 minutes at 6 ft. will make a trifling, though quite perceptible, difference. The result of my experiments is that bromide prints should receive at least two minutes' exposure if a good platinotype black tone is required, and so long as with a given negative and light, this or a longer exposure is right, the difference between an exposure at 2 ft. or 6 ft. will not be large. But when at 2 ft. the exposure is only a few seconds, then at 6 ft. the tint will be much better.

The exposure varies as the square of the distance. The square of 2 is 4, the square of 6 is 36. The exposure at 6 ft. will be nine times that at 2 ft.

R. C. M.

### QUESTIONS.

37. Give a process for obtaining a negative directly from a negative.  
38. What are the probable causes of blisters in prints? and state the remedies.

39. Describe the process of photography.

(Latest day for Answers, July 6th.)

### RULES.

1. Answers must be received on the morning of the Monday week following the publication of the question.
2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.
3. A *nom de plume* may be used, and must follow every answer, but in every case the full name and address must be written on the back.

4. Answers must not exceed 250 words, unless otherwise stated by the examiners, and the number of words in each answer must be written at the bottom of the same. Competitors disregarding this rule will not be awarded marks.

5. Those desirous of competing must apply to have their names entered, as these examinations are intended to encourage the study of the theory and practice of photography. Authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

**NOTE.**—No information of any kind will be given to competitors upon the questions set, and nothing but the answers must be included for the examiners; all other communications must be addressed to the Editor.

Marks will be given for all answers, and when possible, the three best answers will be published. Three prizes will be awarded at the end of each quarter.

All communications to be addressed:—

"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER,  
1, CREED LANE, LONDON, E.C.

## Reviews.

*Fallowfield's Photographic Annual* for 1891 has just come to hand. The first part consists of a profusely illustrated catalogue of the goods in which Mr. Fallowfield deals, cameras, lenses, plates, paper, mounts, etc. Next comes a list of the makers' formulæ for developing the various brands of dry plates; for intensification and reduction; and also for treating platino-type, bromide, and other similar papers. A table of tests for impurities in photographic chemicals will be found useful, as will also the conversion of French into English weights and measures. The last part of the book is devoted to 156 hints, gathered from many sources, and dealing with all branches of the art-science. The book is well got up and is of a convenient size.

**Christchurch, Hants.**—Many of our readers will be interested to know that Mr. Alfred Mallett, High Street, Christchurch, has fitted up a dark-room. Visitors to Bournemouth usually make a pilgrimage to Christchurch, and, if photographers, may be glad of the use of a dark-room.

**Mr. William Hume**, of Lothian Street, Edinburgh, has sent us a copy of his very excellently illustrated catalogue, containing some sixty-four pages of useful matter, descriptive of the goods sold by him. We commend to our readers the quotation, culled from Mr. Goschen's Budget speech of 1891, with which Mr. Hume prefaces his catalogue, "It is no longer better to buy in the cheapest market but in the best." In cameras we note the "Universal," fitted with turntable, rising front, vertical and horizontal swing-back. It will work with the shortest focus lenses, or may be racked out to carry long-focus lenses. The "Field" and "Tourist's" cameras are both useful types. Special apparatus for photo-micrography are worth attention. Perhaps the most successful of Mr. Hume's many inventions is his Cantilever enlarging apparatus, in which the light is equally distributed all over the picture, giving no shadows or flares. The mechanical parts are easily accessible, and we thoroughly endorse the words of the maker, that "the whole of the apparatus is compact, substantial, and well finished." Intending purchasers should see the "Cantilever." Mr. Hume has a special form, which he names the "Indian Pattern;" this is designed and constructed to withstand the attacks of insects and the moist heat of tropical climates. The amount of woodwork is reduced to the smallest proportion. The "Cantilever" when fitted with 4 in. condensers forms a most admirable and compact projection lantern and is particularly easy to manipulate. We note a useful "Developing Bench," which can be used either by professional or amateur. The bench is  $4\frac{1}{2}$  ft. long by  $2\frac{1}{2}$  ft. broad, and stands 3 ft. high, with lead-lined, shallow sink, 24 by 20, horizontal shelves below to hold large or small trays, and narrow shelves above for bottles, etc. This is sold at £3 10s., or fitted with water and gas fittings, £6 10s. We know from practical experience the comfort of these developing benches, and always strongly advise their use. All the best makes of lenses are stocked, view finders, focussing lenses, etc. Shutters of various makers are on sale, but when last at Edinburgh we were much pleased with "Hume's New Timing Shutter," which opens and closes at the centre, and gives prolonged exposures at the will of the operator, so long as the pneumatic ball is compressed. Dark-room accessories of almost every kind will be found upon Mr. Hume's extensive premises. Plates, mounts, chemicals, etc., of the best are stocked. To our subscribers north of the border, the name of Hume is too well known to need any word from us, but to those of our readers who are going north for their holidays, we would strongly advise them to pay Mr. Hume a visit. There will be no need for them to cumber themselves with photographic impedimenta. Mr. Hume can supply all their wants, and we can assure them that he will give a hearty welcome to any visitor from the south. His catalogue has the distinct advantage of containing what is wanted, and not an enormous mass of paper and print that is often only a hindrance when it was meant to be a help.



# "Amateur Photographer" Dark-Rooms, 1891.

THE "DARK-ROOMS" kindly placed at our service for the use of amateur photographers are classed as follows:—

- a* Amateur *d* Dealer or professional.  
*h* Hotel *s* Photographic society.

## Letters of Introduction, Three Penny Stamps.

<i>a, d</i> (2) Aberdeen	<i>a</i> Coniston	<i>d, h</i> Jarrow	<i>h</i> Paignton
<i>d</i> Aberystwith	<i>d, s</i> Crewe*	<i>d, h</i> Jersey	<i>h</i> Paisley, N.B.
<i>d</i> Addingham, Yorks*	<i>d</i> Crewkerne*		<i>d</i> Penrith
<i>d</i> Amsterdam	<i>d</i> Croydon*	<i>d, s</i> Keighley	<i>d</i> Penzance
<i>d</i> Andover, Hants*		<i>h</i> Kempston	<i>d</i> Pershore
<i>s</i> Ashton-under-Lyne	<i>a</i> Dalton-in-Furness	<i>s</i> Kendal	<i>a</i> Perth*
<i>d</i> Aylesbury, Bucks	<i>d</i> Darlington	<i>a</i> Kingstown, Dublin	<i>a</i> Poole*
	<i>d, h</i> Dartmouth	<i>a</i> Knutsford	<i>h</i> Port Erin, Isle of Man
<i>d</i> Banff, N.B.	<i>d</i> Deal*	<i>d, h</i> Lancaster	<i>d</i> (2) Preston
<i>d</i> Barmouth, N. Wales	<i>d</i> Derby	<i>d</i> Larne	<i>h</i> Prince's Risboro'
<i>a</i> Barnsley*	<i>a</i> Devizes*	<i>d</i> (2) Leamington	<i>d</i> Ramsgate
<i>d</i> Barnstaple	<i>d</i> Devonport	<i>d</i> Lechlade	<i>d</i> Reading
<i>d, s</i> Bath	<i>h</i> Dingwall, N.B.	<i>h</i> Ledbury	<i>h</i> Redcar
<i>h</i> Beaconsfield	<i>a</i> Doncaster	<i>a, d</i> Leeds	<i>h</i> Redditch
<i>a</i> Bedford	<i>a, d</i> (2), <i>h</i> (2) Douglas, Isle of Man	<i>a, d</i> Leicester	<i>d</i> Rhayader
<i>d, s</i> Belfast	<i>d</i> Dover	<i>d</i> Leek, Staffs	<i>d</i> Richmond, Surrey
<i>d</i> Belper	<i>d</i> Dresden, Germany	<i>a</i> Lenzie, N.B.	<i>a</i> Ringwood, Hants
<i>d</i> Bergen, Norway	<i>d, h</i> Dublin	<i>d</i> Leytonstone, Essex	<i>d</i> Rochdale
<i>d</i> Berlin	<i>h</i> Dunblane, N.B.	<i>d</i> Lincoln	<i>a</i> Rodley, near Leeds
<i>h</i> Bex, Switzerland	<i>d, s</i> Dundee	<i>d, s</i> Liverpool	<i>d</i> Romford
<i>d</i> Bexhill-on-Sea*	<i>a</i> Dungarvan, co. Waterford	<i>h</i> Lizard, Mullion	<i>d</i> Royston
<i>d</i> Birchington-on-Sea*	<i>d</i> Duns*	<i>d</i> Llandudno*	<i>d, h</i> Ryde, Isle of Wight
<i>a, d, s</i> Birmingham	<i>d</i> Durham*	<i>d</i> Llanidloes*	
<i>d</i> Blackburn, Lancs		<i>d</i> London, Aldersgate, E.C.	<i>a</i> St. Agnes
<i>d</i> Blackheath	<i>d</i> East Molesey, Surrey	<i>d</i> Borough, S.E.*	<i>d</i> St. Andrews, N.B.
<i>h</i> Blakney, nr. Severn Bridge	<i>s</i> East Southsea	<i>d</i> (2) Charing Cross Road, W.C.	<i>h</i> St. Asaph
<i>h</i> Bodiam	<i>h</i> Ebbw Vale	<i>d</i> Charterhouse Sq., E.C.	<i>d</i> St. Bees
<i>d</i> Bodmin	<i>d</i> Edinburgh	<i>d</i> Cheapside	<i>a</i> St. Helens*
<i>d</i> Bolton	<i>s</i> Egremont	<i>a</i> Chelsea, S.W.	<i>d</i> St. Heliers
<i>h</i> Bonar Bridge	<i>h</i> Ennistymon, co. Clare	<i>d</i> Clapham Junction	<i>a</i> St. Ives, Hunts*
<i>h</i> Boro' Bridge, Yorks	<i>a</i> Enfield Town*	<i>d</i> Fenchurch Street, E.C.*	<i>d</i> St. Leonards*
<i>d</i> Bournemouth	<i>d</i> Eton	<i>d</i> Fleet Street, E.C.*	<i>h</i> St. Mellons
<i>d</i> Bournemouth, West	<i>a, d</i> Evesham	<i>d</i> Gracechurch Street, E.C.	<i>h</i> St. Monans, N.B.
<i>d</i> Bradford	<i>d</i> Exeter	<i>d</i> Hackney, N.E.	<i>h</i> St. Neots
<i>d</i> Bramley, near Leeds		<i>d</i> High Holborn	<i>d</i> Sandgate, near Folkestone
<i>d, h</i> Brechin, N.B.*	<i>s</i> Falkirk	<i>d</i> London Bridge, S.E.*	<i>d</i> Sandown, Isle of Wight
<i>h</i> Bridge, near Canterbury	<i>d</i> Falmouth*	<i>d</i> New Cross, S.E.*	<i>a, d</i> Scarborough
<i>d</i> Bridlington Quay	<i>d</i> Faversham	<i>d</i> Peckham, S.E.	<i>h</i> Seddlescomb, near Battle
<i>h</i> Brigg, Yorks	<i>d</i> Felixstowe*	<i>d</i> South Norwood, S.E.	<i>h</i> Shaftesbury
<i>d</i> Brighton, Ho' e	<i>d</i> Filey	<i>d</i> Walworth Road, S.E.*	<i>d</i> Shanklin, Isle of Wight
<i>d, h</i> Brighton	<i>d, s</i> Finchley	<i>a</i> Long Eaton	<i>d</i> (2), <i>s</i> Sheffield
<i>d</i> Bristol	<i>d, d</i> Fleet	<i>h</i> Long Melford	<i>h</i> Shepton Mallet
<i>h</i> Broadway, Worcester	<i>h</i> Fochabers, N.B.	<i>d</i> Loughborough*	<i>d</i> Shrewsbury
<i>h</i> Bromley, Kent	<i>d</i> Folkestone	<i>a, d</i> Louth	<i>h</i> Sleaford
<i>h</i> Brough, Westmoreland	<i>a</i> Four Ashes, nr. Stourbridge*	<i>d</i> Lowestoft	<i>d</i> (2), <i>h</i> Southampton
<i>d</i> Burnley*	<i>a</i> Frodsham	<i>a</i> Ludlow	<i>h</i> Southend-on-Sea
<i>s</i> Burslem		<i>d, h</i> Lynmouth*	<i>a, d</i> Southport
	<i>a</i> Galashiels, N.B.	<i>d</i> Lynn*	<i>a, s</i> Southsea
<i>a</i> Cadiz, Spain*	<i>d</i> Galway	<i>a</i> Lythe, Whitby	<i>d</i> Southwell
<i>h</i> Callander, N.B.	<i>a</i> Genoa		<i>a</i> Stamford
<i>h</i> Camborne	<i>h</i> Giant's Causeway, Ireland	<i>h</i> Macroom, N.B., co. Cork	<i>a</i> Steyning
<i>d, h</i> Cambridge	<i>d</i> (2) <i>s</i> Glasgow	<i>a</i> Madeley, Salop	<i>d</i> Stockton-on-Tees
<i>d</i> Cardiff	<i>s</i> Glenalmond, N.B. (nr. Perth)	<i>d</i> Maidenhead	<i>a</i> Stoke-on-Trent
<i>d</i> Carnarvon*	<i>h</i> Glenarm, Belfast	<i>a</i> Mainz, Germany*	<i>a</i> Stony Stratford
<i>h</i> Capel-Curig, N. Wales	<i>d</i> Gloucester	<i>d</i> Manchester*	<i>a, d</i> Stourbridge
<i>a</i> Chalfont St. Peter, Mid.	<i>d</i> Gorleston	<i>h</i> Mallow, co. Cork	<i>d, h</i> Stratford-on-Avon
<i>d</i> Cheltenham	<i>a</i> Goring-on-Thames	<i>a</i> Malta*	<i>d</i> Stroud
<i>d</i> Chepstow	<i>a</i> Gravesend	<i>d</i> Malvern	<i>h</i> Sudbury, Suffolk
<i>d</i> Chester	<i>d</i> Great Yarmouth*	<i>d</i> Mansfield	<i>h</i> Sunderland
<i>a</i> Chesterfield		<i>d</i> (2) Margate	<i>h</i> Sutton Bridge
<i>a</i> Chipping Sodbury	<i>a</i> Halifax	<i>d</i> Marsden, near Huddersfield	<i>h</i> Sutton
<i>d</i> Christchurch	<i>d</i> Handsworth*	<i>d</i> Merthyr Tydfil	<i>h</i> Swindon
<i>a</i> Cinderford	<i>d</i> Hanley	<i>d</i> Merton	<i>h</i> Symond's Yat, near Ross
<i>d, h</i> Cirencester	<i>d</i> Harrogate	<i>d</i> (2) Middlesbrough	
<i>d</i> Clacton-on-Sea	<i>d, h</i> Hastings	<i>d</i> (2) Milan	<i>d</i> Taunton
<i>s</i> Cleckheaton	<i>s</i> Havant	<i>h</i> Monmouth	<i>a</i> Tavistock*
<i>d</i> Clevedon*	<i>d</i> Hereford	<i>d</i> Montrose, N.B.	<i>d</i> Teignmouth
<i>d</i> Clifton	<i>d</i> Hexham	<i>a</i> Mountsorrel	<i>a</i> Thornton Dale, nr. Pickering
<i>a</i> Clitheroe	<i>h</i> Holbeach	<i>a</i> Mumbles, near Swansea	<i>h</i> Thorpe
<i>d</i> Colchester	<i>a, d</i> Hull		<i>h</i> Tintern Abbey
<i>h</i> Colnbrook		<i>d</i> Newark, Notts	<i>d</i> Todmorden
<i>d</i> Colwyn Bay	<i>a, d, h</i> Ilfracombe	<i>d</i> Newcastle-on-Tyne	<i>d</i> Torquay
<i>h</i> Congleton	<i>d, s</i> Ipswich	<i>d</i> Newport, Mon.	<i>h</i> Tring
		<i>a</i> Newport, Pembroke	<i>d</i> Tunbridge Wells
		<i>a</i> Niton, Isle of Wight	<i>a, d</i> Tynemouth
		<i>d</i> Norwich	
		<i>d</i> Nottingham	<i>s</i> Uttoxeter
		<i>a</i> Northallerton*	
			<i>a</i> Ventnor
		<i>s</i> Oldham	<i>a</i> Vienna
		<i>a, d</i> Oxford	<i>h</i> Wadebridge

NOTE.—At the time of going to press we have not received signed authority for the use of "Dark-rooms" marked\*; but they were all placed at our disposal last year, and are doubtless available.—ED. AM: PHOT.



d Wakefield	h Wrexham
h Warwick	d, h Windsor and Eton
d Waterford	d Wisbech
d Wath-on-Dearne	d Wolsingham
a Wellington, Salop	a Wolverhampton*
d, s West Hartlepool	a Worcester
h Westgate-on-Sea	d, h Worthing
d Weston-super-Mare	
h Wetwang, York	
d Weymouth	a Yarm
d Whitby	d Yeovil*
d Wimbledon	a, d York
d Winchester	d Youghal

APPLICATIONS for letters of introduction must be accompanied by **three penny stamps**. Full particulars are given as to charges (if any); plates, chemicals, etc., kept in stock by dealers; terms for temporary membership of societies, etc., etc.

THE OWNER of Dark-Room will be advised by same post as the applicant. In order to prevent delay, all applications should be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., and *plainly* endorsed "Dark-Rooms."

CONTINENTAL DARK-ROOMS.—Information can be supplied respecting many Dark-Rooms on the Continent, and addresses given of firms who stock photographic materials.

## Societies' Meetings.

**Ashton-under-Lyne.**—On the 13th inst. eighteen members of this society, under the leadership of Mr. J. W. Kenworthy, journeyed to Haddon Hall, taking conveyances from the station. The party were soon photographing the interior and exterior of this noble place. The time pressing, the company adjourned to one of the outer buildings of the hall to partake of refreshment, and afterwards the party walked along the river side to Rowsley, taking several views on the way. Arriving at the station about 7.30, a special train was fortunately stopped, the members getting home at 9.30, instead of 11.30 p.m. On Thursday last, at the club premises, Mr. W. Chadwick showed some good negatives of the Ilkley district, developed with pyro and soda; Mr. W. Mackley, negatives; Mr. C. Lord, stereo transparencies, and the Secretary, opalines. Messrs. Marion and Co. have presented the society with two specimen plates. Next out, June 27th, Gawsworth; leader, Mr. C. E. Redfern.

**Bedford.**—At the ordinary meeting on the 16th inst., the President in the chair, Mr. Perrott Smith read a paper on "Kallotype," giving a clear and concise description of the process, and demonstrating its various stages. The members present took much interest in the subject, and several questions were asked and answered. The rich sepia tones obtainable by the new process met with general approval. The great recommendation of the process appears to be its economy—the expense of working it being smaller than any other capable of giving equally good artistic results. But being, as the President remarked, a silver process, it must necessarily share the failing—want of permanence—from which platinotype is so pre-eminently free. A cordial vote of thanks to Mr. Perrott Smith for his excellent paper brought the meeting to a close.

**Dewsbury.**—An ordinary meeting was held on the 11th inst. Mr. C. Naylor (Vice-President) in the chair. No paper being down for this evening, a goodly number of members brought prints and transparencies for inspection. The Secretary showed a negative taken on one of Marion's sample Britannia plates, and developed with pyro, meta-bisulphite of soda, and common washing soda. The negative was much admired, being all that one could desire. The rest of the evening was spent in a social manner, various subjects coming in for a share of comment.

**Dorset.**—The third meeting of the season for field work was held at Shaftesbury on the 17th inst. Proceedings commenced with the exposure of plates in the town, the old church and the Abbey walls being paid due attention to. After lunch the Hon. Secretary (Rev. T. Perkins) read a paper on "Pinhole Photography," and showed several examples of pictures taken by himself without a lens. The party then drove through Semley and the Vale of Wardour, when many excellent subjects were found; to the ruins of Old Wardour Castle, where every remaining plate was exposed on views of the ruins and magnificent cedars, without exhausting the photographic possibilities of the place.

**East London.**—A general meeting was held on the 15th inst. at 333, Old Street, E.C., present head-quarters, when the retiring Secretary (Mr. H. G. Wallis) was elected one of the Vice-Presidents of the Society. Mr. M. A. Wilkinson was elected as Secretary.

**Faversham.**—The monthly meeting was held on the 16th inst.

eleven members being present, and Dr. Evers presiding. The subject for the evening was inspection and comparison of photographic apparatus, including cameras, lenses, instantaneous shutters, dark slides, focussing cloths, view finders, print and plate washers, and many other useful accessories too numerous to mention. It was resolved that the Society procure an album in which should be placed one photograph taken by each member attending the several excursions. Captain Hooper kindly offered to present the Society with another album for the purpose of receiving photographs of special interest or merit. A number of photographs taken at the late excursion were exhibited and criticised.

**Glenalmond.**—At the fortnightly meeting the President took the chair. It was decided that the photographs for the two competitions which the club have now on hand should be sent in by July 11th. Mr. Craig then reviewed the work of the club during the last year. A discussion took place as to whether the club had increased in energy or not. After several things had been pointed out by the President and other members, it was unanimously agreed that the energy had certainly increased. Mr. Johnstone then showed an Eclipse hand-camera, and the President a new travelling lamp. The meeting then inspected some photographs by the President and Mr. Johnstone.

**Holborn.**—The meeting on the 19th inst. proved an exceedingly instructive evening. Mr. E. H. Bayston took the chair. Mr. Frederick J. Cobb demonstrated first on silver printing. He gave a short history of the process, which he thought was the most popular among amateurs, although of late years the numerous processes which had been introduced had tended, to a certain extent, to decrease its popularity. He gave a few hints on keeping the paper, which, he said, would keep for a considerable time; even after printing, if the print was well washed, it would keep for an indefinite period. He always used the acetate toning bath, which was, in his opinion, the best that could be used. An old bath would work much better than a new one. He toned a few prints with the acetate bath, which worked exceedingly well. Mr. A. J. Golding then demonstrated on gelatino-chloride and silver emulsion paper. The extreme simplicity of the working of this paper recommended itself to all amateurs. He had never met with any great success in ordinary silver printing, but he had obtained, without any trouble, excellent results on this paper. The depth of printing depended, to a great extent, upon the method of finishing the print. If it was finished with a matt surface, it need not be printed so deep as if it was to be enamelled. After printing, the prints should be well washed and placed in a 10 per cent. solution of chrome alum, to harden the film. The time the print should be left in the bath depended upon the temperature; the warmer the air, the more time it should be left in the bath. He used the following toning bath:—Dissolve 2½ drachms of sulphocyanide of ammonium in 16 ozs. of water, and one day before it was intended to use the bath, add 3 drachms of a 15 drachm gold solution. He believed in quick toning, because they were dealing with a delicate surface which would not stand much handling. The richness of the tone depended upon the amount of sulphocyanide of ammonium in the bath. The fixing bath was 2 oz. of hypo to 20 oz. of water, leaving the prints in about ten minutes. He had not noticed any loss of tone while in the fixing bath. With regard to the final washing, he thought two hours would be sufficient. In his opinion the prints did not require so much washing as ordinary silver printing, because the hypo was on the surface and not soaked in the albumen. The print could be finished with a matt surface or enamel, by using plate-glass for the latter, or ground-glass for the former. The glass, after being thoroughly cleaned, was dusted with talc, and the print squeegeed down, and peeled off when dry. Starch was the best mountant. If the print was finished with an enamel surface, mounting was exceedingly difficult. The prints, after being squeegeed down, should be backed with the piece of waterproof paper which came off with the print, and prevented the moisture from the mountant going through the paper, and affecting the enamel surface of the paper. He then toned and fixed some prints on Obernetter and Liesegang's Aristotype, together with one which had been printed some twelve months ago on Fallowfield's paper, all turning out splendid. This he followed up by finishing off some prints with a matt surface. The Chairman said he had tried both processes. With regard to preserving silver paper, an old piece of sensitised paper placed with the other paper was an excellent preservative. When squeegeeing down an Aristotype print on to glass a great difficulty was to get rid of the air-bubbles. He had found that if a pool of water was left on the glass, and the print placed in the pool, no air bubbles would result. Mr. Herbert Thompson said he could quite concur in Mr. Golding's remarks on the simplicity of the working of the paper over ordinary silver paper. He did not recommend the use of chrome alum, but ordinary alum, as the former was liable to give a green colour to the whites. With regard to washing, he thought Aristotype prints would require more than ordinary silver prints, as hypo, in his opinion, seemed to cling most tenaciously to gelatine. Mr. G.



Luxton said the best way of thoroughly cleaning glass plates was to use the following: Photographic tripoli, methylated spirits, and water. The quantity of each could easily be ascertained. Mr. A. G. Golding said, with regard to air bubbles, if after the print had been peeled from the glass it was found that air bubbles had been present, the print could be washed in water, and squeegeed down on the glass again.

**Jersey.**—Taking advantage of the weather, which has been more seasonable than in England, this Society has commenced its excursions early, and have repeated them often, so that before long it will be necessary to emigrate for novelties. On May the 18th the rendezvous was "The Weighbridge" for St. Heliers Harbour and shipping bits. On June 5th a drive took place across the island, *via* Millbrook and the famous Vinchelez Lane, to the ruins of Grosnez and the caves of Plemont, whence all returned contented with every plate exposed. Lastly, as all the previous five excursions had been chiefly by the sea, on the 17th inst., an excursion was arranged to investigate the artistic capabilities of St. Lawrence Valley and its mills. In each of the competitions arising out of the excursions just mentioned, Colonel Jackson has secured the largest aggregate of votes, and also secured the club certificates for the best picture taken on the last two excursions. For the Harbour excursion, Mr. Hammond Spencer came first, and for the St. Lawrence Valley excursion Miss Le Cornu was a good second. It has been decided that the gold medal of the Society be given for the highest aggregate obtained at excursion competitions, but to equalise the chances of members unable to attend all excursions, one half the total number of excursions is to be the maximum number of scores to be sent in by each competitor. There has been only one paper read this month—thoroughly practical—by Colonel Jackson, on "Silver Printing and the Sensitising of Albumenised Papers." Three new members have been elected, Miss Croft, Miss Le Gallais, and Capt. Swan. The next excursion is to be to L'Etac on July 5th, at 3.

**Lewisham.**—On the 19th inst., Mr. Castle in the chair, the members who turned up to hear Mr. Child on "Chinese Artists" were amply rewarded, as the lecture proved very interesting. Mr. Child brought with him pictures, bronzes, china, and numerous other works of art, which he fully described. Among other things he drew attention to the fact that the Chinese always reversed the perspective in their drawings. Another curious thing about them was that they would not have their portraits taken during life, but when dead their relatives called in several artists who have to draw from memory, the one who most correctly delineated their attire being finally chosen. The face was quite left out of the consideration. Next meeting, July 3rd, "Exposure," Mr. E. Eastwood.

**Lowestoft and District.**—A meeting was held on the 19th inst., Mr. W. Stringfield, in the absence of Mr. F. Mayhew, presiding. After the election of members, several topics arose for discussion, amongst them, that of development, and it seemed to be the general opinion that pyro and ammonia afforded the best results. Some few supported hydroquinone, but admitted that negatives produced thereby did not print so satisfactorily. Several prints and negatives were passed round for inspection by Messrs. F. W. Emuse, J. Rose, and A. M. Smith. Mr. Stringfield showed a few good lantern slides, principally interiors.

**Newcastle-on-Tyne.**—The second outdoor meeting was held on the 18th inst., the venue being Ripon and Studley Park. With the exception of the wind being rather troublesome at times, the day was a perfect one. After breakfast at Ripon, the party, numbering twenty-three, under the leadership of Mr. M. Auty, of Tynemouth, took breaks to Studley Park, where a most enjoyable time was spent, and over two hundred plates exposed, mostly upon the old ruins at Fountains Abbey. Dinner at the "Black Bull" Hotel, Ripon, concluded a very pleasant day's outing.

**North London.**—At the meeting on the 16th inst., Mr. A. Mackie in the chair, Mr. Hudson demonstrated with his new patent continuous flash lamp "The Kolm." After all the arrangements were complete, and Mr. Hudson had explained the whole to the members, he took two very successful negatives of the Chairman and one of the members, and, further to test the capabilities of the lamp, at the request of some of the members he took an excellent negative of a group of all the members present. The negatives were developed by the Chairman, and turned out to be equal to anything taken by daylight, the exposure, quality, and lighting being all that could be desired. The negatives are to be printed from by Mr. Oakley, and shown to the members at their next meeting. A member exhibited a number of negatives, his first attempt at hand-camera work, which he had failed to develop properly with the hydroquinone developer, and asked the reason of his failure. The Chairman replied that it was always a good plan so to make up the developer that one was able to say at once what were the relative proportions of the various constituents, instead of simply saying, these were developed with hydroquinone, or those with pyro and ammonia, etc.; and in order to make it clear what was meant by 10 per cent. solutions, he wrote the following formula on the black-board:—

#### 10 per Cent. Pyro.

Pyro .....	1 oz. bottle.
Citric acid .....	60 grs.
Sulphite of soda .....	3 oz.
Water, to make .....	9½ oz.

Dissolve the sulphite in some water, add the citric, then pour it into the pyro, and when the latter is dissolved pour the whole into a measure and fill up to 9½ ozs. exactly.

#### 10 per Cent. Bromide.

Bromide of potassium .....	1 oz.
Water, to make .....	9½ oz.

#### 10 per Cent. Ammonia.

Ammonia .....	1 oz.
Water, to make .....	10 oz.

#### 10 per Cent. Soda.

Anhydrous carbonate of soda .....	1 oz.
Water, to make .....	10 oz.

For pyro ammonia developer, take 20 minims pyro, 10 minims bromide, 20 minims ammonia, water 1 oz. For pyro and soda developer, take 20 minims pyro, 120 minims soda, water to make 1 oz. The next meeting will be on Tuesday, July 7th, when, as Mr. Dando cannot give his promised demonstration on "The Collodio-Bromide Process," the Hon. Secretary will read a paper on "Leaves from my Note-Book, and How I Use them."

**Photographic Society.**—At the meeting on the 9th inst., Mr. J. Glaisher, F.R.S., President, in the chair, Messrs. F. W. Harrold, J. Howson, and T. R. Shervinton were elected members of the Society. Six new candidates were proposed. It was announced that twenty-eight books had been presented to the Society's library by Messrs. W. Vanner, G. H. Shepherd, L. Warnerke, and F. D. Cembrano, junr. Captain W. de W. Abney, F.R.S., read a paper on "An Undiscussed Point, the Illumination of the Dark Room." In this paper the author showed that the law of inverse squares did not hold good when lights equal to the one-millionth of a candle are used. He said the reason why the dark corners of a room lighted by canary medium were better illuminated than when the illuminator was that of ruby glass was that the former had five times greater penetrating power than the latter. Mr. J. Spiller enquired whether it would not be better to use green as the danger signal on our railway lines. Captain Abney said these experiments did not apply to signal lights; and in foggy weather green light appeared white to the eye owing to the blue rays being cut off. The Secretary drew attention to the Holiday Candle Lamp kindly presented to the Society by Messrs. Benham and Froud.

**Richmond.**—An excursion to Shepperton was arranged for the 13th inst. Only three members turned up, who found some excellent subjects in the neighbourhood. The ordinary meeting was held on the 19th inst., Mr. Davis in the chair, when the subject for discussion was "Tourist Kits."

**Southport Social.**—On the 17th inst. Mr. Cross commenced a series of demonstrations on "Printing." The various printing processes are intended to be gone through fully, and ought to prove valuable to the members. The first was "silver" printing, and a vote of thanks was passed to Mr. Cross for the very able manner in which he explained numerous "dodges," etc., which were well illustrated by prints taken for the purpose from faulty negatives. The society still continues to increase, therefore a good exhibition is expected in October.



**"Answers" and Photography.**—Amateur photographers often favour me with specimens of their work, and this week I have to thank "Amateur Photographer," who sends me from Parkfield Vicarage, Middleton, Manchester, a charming copy of our coloured plate; and also a gentleman at Teignmouth, who has photographed his pretty little baby daughter looking at one of our papers through a huge pair of spectacles.

**Burnet's Essays.**—A correspondent writes: "A few weeks ago I took up a number of the AMATEUR PHOTOGRAPHER at a dealer's shop, while waiting to be served, and was much struck with an excellent republication of Burnet's Essays on Art, ably edited by Mr. H. P. Robinson. I at once ordered all the back numbers for the year, and entered my name as a regular subscriber, and I must thank you for the great pleasure and benefit which I have derived from a perusal of your journal, and particularly the articles referred to."

**Flashlight.**—Herr Putz informs the Vienna Photographic Society that he uses aluminium as a substitute for magnesium to produce an intense actinic light such as photographers require. He first tried mixing the aluminium in powder with chlorate of potash and sulphide of antimony; but as that produced an objectionable smoke, the antimony was dispensed with, and a good result was obtained. He also tried thin leaves of aluminium between sheets of collodion cotton impregnated with chlorate of potash, which gives a brilliant light without any smoke at all.



## To Correspondents.

THE insertion of **QUERIES** and **ANSWERS** is attended with much labour, and it is requested that the questions asked and the answers given shall be short and to the point. No charge is made.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S** Post.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

4793. **Developing.**—I am told to develop with Beach's developer until the negative becomes dark. Am I to continue to develop, say a figure with black coat, until the white appearance of the coat disappears and it becomes nearly same as collar, fine and other parts which will eventually be white, but which on negative are black?—J. T. H.

4791. **Pinholes on Negatives.**—How can I avoid these? I brush plate before developing, and use filtered water with bath; but wash with tap water. I use Ilford plates.—J. T. H.

4792. **Hastings.**—I should be glad of a few hints about views to be taken in and around Hastings, also the best time and positions to take them in July. Any information would be very acceptable, more especially from amateurs who are residents.—F. W. REYNOLDS, Aberdeen House, Camberwell Station Road, S.E. [Note: See article in AMATEUR PHOTOGRAPHER, June 8th, 1888.—ED.]

4793. **Taupenat.**—Will some reader please state the formula for Taupenat's collodio-albumen process? also Mr. Ackland's modification?—ANON.

4794. **Snap-Shot Developer.**—In making up the snap-shot developer mentioned on page 337, I had not seen the correction which was made in a later issue, that the citric acid was 15 grains and not grammes as was printed, and, therefore, I put in 15 grammes, with the result, of course, that it would not work at all, and also, there were evolved fumes somewhat similar in smell to strong acetic acid and which produced violent coughing. What would this be from, and what gas is it? If any reader can throw further light on it, I shall be obliged.—JOHN R. WILLIAMSON.

4795. **One-Solution Intensifier.**—Wanted, a formula for the above, one that will keep and will reduce the negative to a deep orange brown. There is such an one, but I cannot get hold of the formula.—J. H. J.

4796. **Colouring Transparencies.**—Would any reader kindly explain how to colour photographic transparencies for magic-lantern slides, indicating what colour is used and the medium, etc.?—OXY-HYDRO.

4797. **Drink Traffic.**—Could any reader supply copies of negatives or transparencies for magic-lantern slides, showing the ravages caused by the drink traffic, suitable for illustrating free lectures to young people?—PYRO.

4798. **Bromide Paper.**—I shall be glad to learn what success any of your readers have had with the Ilford hydroquinone formula (1 oz. No. 1, 1 oz. No. 2, and 1 oz. water) with this paper. Having failed with it, I should like to hear the experience of others before trying another formula.—MUWA.

4799. **Exposure Meter.**—Could any reader in the Edinburgh centre kindly tell me the name of the exposure meter mentioned by Mr. F. Dundas Todd at the closing meeting for the season of the Edinburgh Photographic Society on 3rd inst.? Also where to get it and its price, and its relative rapidity to ordinary Ilford plates.—INSTANTOGRAPH.

4800. **"Work," Last Vol. of.**—Will some reader kindly inform me in what numbers of the last volume of "Work" instructions were given for making a case for quarter-plate Instantograph so as to use it as a hand-camera?—INSTANTOGRAPH.

4801. **New Zealand, Camera for.**—I intend shortly to return to New Zealand, and want to take my camera (Underwood's Instanto) and slides. What is the best

way to take them through the tropics without danger from warping, etc.? Should I have them brass-bound, or is there some way of wrapping them in oiled paper and enclosing in a tin box?—KAIKOURA.

4802. **Shutter.**—Will any amateur kindly inform me if Tylar's Norden flap shutter is a reliable one, and whether it is free from vibration?—POOR OLD ALF.

4803. **Cromer.**—Would someone kindly give me an address of a farmhouse or cottage about two miles inland from Cromer, suitable for spending holiday with the camera, and oblige?—VICTOR.

4804. **Henley.**—Would some brother amateur be kind enough to allow me the use of his dark-room for the purpose of changing plates during Henley Regatta, as I have only one dark-slide, and wish to take several pictures?—F. W. ROWE.

4805. **Isle of Man.**—I am going, next week, to the island for a few weeks. Will anyone tell me where I shall find some pretty bits for the camera? I expect to be at Douglas, Ramsey, Port Erin, etc. Is there a dark-room for use of amateurs at any of these, and can Ilford plates be obtained? Any hints will be gratefully received.—X. [Note.—There are several dark-rooms at Douglas; see our list. For "pretty bits," see AMATEUR PHOTOGRAPHER of September 16th, 1887, and June 15th, 1888.—ED: AM: PAOT:J]

4806. **Warwickshire.**—I should be glad to know if permission to photograph is required for the following places, and if so, where it can be obtained: Warwick Castle, Kenilworth Castle, Guy's Cliff, Stratford-on-Avon Church (interior). I understand there are a number of picturesque moated houses in the county, and would be glad to know where to find any in the neighbourhood of Warwick or Kenilworth. Also any information as to picturesque or half-timbered cottages, farmhouses, or villages in same district.—J. G. PATTERSON.

4807. **Norway.**—I am thinking of spending my holidays in Norway. Will someone kindly say whether I shall find plates of ordinary rapidity or quick plates (instantaneous) most in requisition for general photography? Any hints most acceptable.—A. T. B.

4808. **Changing Bag.**—Will someone please tell me of a good whole-plate changing bag for changing dry plates, and where I can get same?—A. T. B.

4809. **Wheeler's Exposure Tables.**—I use Wheeler's exposure tables, and find them a fairly good guide, but I am puzzled how to ascertain the relative rapidity of different brands of plates. The tables are calculated, for "10 times" plates, up to "60 times," and Ilford ordinary are put at "30 times." Can any of your readers kindly say how many "times" (the expression seems to me a clumsy one) some of the leading brands should be estimated at? In particular, Ilford rapid and extra-rapid, Edwards' isochromatic, and Thomas's.—GRINGO.

4810. **Fogged Plate.**—When a plate is slightly fogged by exposure to light during fixing, how can the fog be got rid of?—GRINGO.

4811. **Alpenstock Stand.**—I shall feel obliged if someone who has had experience with this advise me as to the best alpenstock stand for a hand-camera (quarter-plate), one that combines good height, reasonable lightness, and perfect rigidity?—H. S.

4812. **Rotterdam and The Hague.**—I am thinking of going to Antwerp, The Hague, and Rotterdam shortly. Would any reader kindly advise me which would be best to take, the ordinary camera and tripod, or a quarter-plate hand-camera, as I have both; also where could Ilford plates be got, or should I have to take them? Also a hint as to the exposure; is it quicker than here? Would Ilford ordinary be quick enough?—IONA.

4813. **Norway or Scotland.**—Amateur, who contemplates making a tour in one of these countries (former preferred), of about 14 to 18 days' duration, starting about the middle or end of July, will be glad to meet with another amateur who would accompany him and share expenses, or would join a party. Can arrange for starting first week in August, if necessary.—TOURIST (address with Editor).

## QUERIES UNANSWERED.

May 29.—Nos. 4711, 4723.

June 5.—Nos. 4727, 4729, 4732, 4738, 4740, 4746, 4749, 4750.

" 12.—Nos. 4767, 4769.

" 19.—No. 4779.

## ANSWERS.

4772. **Blisters.**—Wash the prints as usual, and then dry between blotting paper under a moderate weight, and, on the prints drying, the blisters will all disappear. The day before I saw your query I had 12 half-plate prints covered with blisters, and they all disappeared on drying.—TASMA.

4775. **Cheap Reducer.**—Try the following:  
 Perchloride of iron .. .. 100 gr.  
 Bromide of potassium .. .. 60 "  
 Water .. .. 8 oz.

Place your negative in this for a few minutes, watching it carefully, wash and refix.—PONT0.

4776. **Varnish, how to Remove.**—Soak the negative in a dish of methylated spirit.—PAN.

4776. **Varnish, how to Remove.**—Soak the negative in methylated spirit, rub the varnish off when

quite soft with a pad of cotton, soak in fresh spirits, and dry.—PONT0.

4777. **Printing Processes.**—Celerotype paper is treated much like ordinary paper, while Kallitype is developed with nitrate of silver and citrate of soda. Pizzighelli platinum paper is the least trouble of any, with the exception of ferro-prussiate, but is nearly three times the cost of silver paper although the chemicals (common hydrochloric acid) cost next to nothing.—PONT0.

4777. **Printing Processes.**—S. Armstrong will find the Celerotype process very simple and no trouble. Printing is done the same way as ordinary silver printing; the paper is printed until the picture is deeper in tone than the finished picture. If S. Armstrong writes to the Blackfriars Photographic and Sensitising Company, 1, Surrey Row, Blackfriars, full particulars will be given. This paper is first-class where a burnisher is not required.—ALPERUM.

4778. **Ferro-Prussiate.**—The above paper cannot, to my knowledge, be turned black, but tones ranging from a copying-green to brown may be obtained by means of pyro and hypo in different quantities.—PONT0.

4780. **Broken Negative.**—If the glass is cracked without the film being torn, soak in weak hydrofluoric acid and water, and float on to a clean plate of glass. If the film is cracked, cement the pieces together on a plate of glass and keep it rotating whilst printing, and the crack will not show much.—PONT0.

4781. **Varnish, how to Make.**—Thin down white hard spirit varnish with twice its bulk of methylated spirit, or make the following:

Seed lac .. ..	120 grm.
Spirit .. ..	1 litre.

—PONT0.

4782. **Cleaning Bottles.**—Wash with hot hydrochloric acid (spirits of salts) and water, and then with hot water.—PONT0.

4782. **Cleaning Bottles.**—Purchase a Winchester quart of commercial sulphuric acid, price 1d. per pound. Put all your dirty bottles, glasses, and anything, in fact, that has no metal attachment on to the scullery sink, and fill them quite full of sulphuric acid. In half an hour turn the acid back, using a glass funnel, into the Winchester. Wash each well with cold water, and they will shine and sparkle like crystal. A Winchester quart will keep all the glass in the house perfectly clean for ten years. If you should slip any on to your clothes, have a small bottle of liquid ammonia at hand; but avoid splashing either into your eye, or your eye will smart.—T. H.

4783. **Quarter-Plate Hand-Camera.**—Yours is a rather formidable list of advantages, and I know of only one fulfilling them all, viz., the Talmer, which is advertised in these pages. There is also George Houghton and Son's Automatic camera, 9½ by 5½ by 4½, weighing 4½ lb., and costing £6 6s. with blind shutter and R.R. lens. The Kodak, quarter-plate size, is little over the dimensions given.—PONT0.

4783. **Quarter Plate Hand-Camera.**—The only hand-camera that will fulfill your somewhat exacting conditions is the new Talmer Euryscope automatic camera, which has the following special features:—(1) size, 9 by 5 by 5½; (2) weight without plates, 2 lbs.; (3) holds twelve quarter-plates; (4) simple and perfected changing of plates; (5) time or instantaneous exposures, effective self-setting adjustable speed shutter; (7) double exposure on one plate absolutely impossible (the changing of plate sets shutter for next); (8) high class rapid Euryscope rectilinear lens, Iris diaphragm adjusted from outside camera, focussing arrangement, and two finders. Makers.—Talbot and Eamer, Blackburn; price £5 5s.—L. BATEMAN.

4784. **Focussing.**—It is not possible, except by placing the background close to the subject or by using a small aperture.—PONT0.

4784. **Focussing.**—You should focus the principal object, or middle distance, as sharp as possible with the full aperture of your lens. Then stop down. If the background is not in focus with the smallest stop, your lens is not worth having. If you want the background in correct focus with full aperture, you must use the swing-back.—PEN.

4784. **Focussing.**—I think the best way to find out how to get both the object and background clear is by trying the various stops, remembering at the same time that the smaller stop you use the more exposure the plate will require. I think f/22 will be about the best stop.—W. H. ELLIS.

4785. **Dark Room, Highgate.**—In reply to G. Parker's query, I do not think there is any dark-room open to amateurs in or round about Highgate. The nearest photographic studio to Chetwynd Road, Highgate, is the Highgate Photographic Studio (J. Hounsell, proprietor), 7, Archway Road, Upper Holloway, N., where you might get permission to use a dark-room for a short time at a small charge.—W. H. ELLIS.

4786. **Reducing.**—See reply to 4775. Spirit cannot possibly have any effect on the density of the film.—PONT0.

4786. **Reducing.**—Make up a solution of hypo the ordinary strength for fixing negatives, also a weak solution of ferricyanide of potassium (say 5 per cent.). Take a camel's-hair brush, and well wet the part of the negative requiring reduction with the hypo solution; after several applications, brush on some of the ferricyanide, and you will observe rapid reduction. Brush on more hypo when sufficiently reduced, and then wash well.—PEN.



4787. **Developer for Ilford Plates.**—The formula described in "Beginner's" query is a fairly good developer, but requires more trouble, both in preparing and mixing for developing. Read my answer to Query No. 4757 in last week's AMATEUR PHOTOGRAPHER. To prepare the developer described is as follows: Take equal portions of each, water and the developer; for a half-plate it requires 2 oz. of developer and 2 oz. of water. This will develop four half-plates if developed one after the other, but if only one or two plates are required to be developed it may be put in a stoppered bottle, and will keep good for four days at the most.—W. H. ELLIS.

4787. **Developer for Ilford Plates.**—"Beginner" will do well to use the formula as follows:—

(1)	
Hydroquinone .. .. .	160 gr.
Bromide potassium .. .. .	30 "
Sulphite soda .. .. .	2 oz. av.
Water .. .. .	to 20 "
(2)	
Soda hydrate .. .. .	100 gr.
Water .. .. .	20 oz.

Have used this, and find it most suitable for a beginner. Get a photographic chemist to make it up for you. If you write me, through Editor, I will send you some for you to try ready mixed, or give you further particulars.—ALPERUM (address with Editor).

4787. **Developer for Ilford Plates.**—Fairly good, but I prefer the following, which is suitable for any make of plates:

10 per cent. Pyro Stock Solution A.	
Pyrogallol acid .. .. .	3 oz.
Sodium sulphite, pure .. .. .	2 "
Citric acid .. .. .	24 gr.
Water .. .. .	5 oz.

Dissolve the sulphite in the water, add the citric acid, and, lastly, the pyro.

Stock Solution B.	
Liquor ammonia, '880 .. .. .	1/2 oz.
Water, to make .. .. .	5 "

Stock Solution C.	
Bromide of potassium .. .. .	1/2 oz.
Water .. .. .	5 "

To develop a half-plate take solution A 1 dr., solution B 1/2 dr., solution C 1/2 dr.; water, to make 3 oz., and proceed as usual.—PEN.

4789. **Quarter-Plate.**—Watson's cameras are all splendidly made, as are Stanley's. The best universal shutter and lens are a really good R.R. and a Thornton-Pickard shutter.—PONTO.

4789. **Quarter-Plate.**—You could not do better than get one of Watson's Acme cameras, etc. This camera, with a good R.R. lens and a Thornton-Pickard shutter, is sure to please you. An Eastman roll-holder can be easily fitted. With such an outfit you can only produce a small picture. A half-plate would be much preferable.—PEN.

4789. **Quarter-Plate.**—I think Thomas Jameson has put too much in his query for a good answer, as it is quite as difficult for me to tell him the best camera, etc., to purchase as it is for him to choose. It is almost impossible to beat the Thornton-Pickard shutter for sharpness and neatness in make. As for the lens, Wray's lenses are as good as he could wish for. The camera is, without doubt, a difficult machine to choose, as all people do not like the same make and style of camera. Get a few illustrated catalogues from a few large firms.—W. H. ELLIS.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

W. MAWDSLEY.—The makers supply a good plate, or try Mawson. /jll on a bright day.

HENRY SURREY.—Professor Burton's formula for a new emulsion printing paper was withheld. It is possible that it may be published in the next number of the Camera Club Journal.

NOX-ALL.—Probably Brixton Camera Club; Hon. Sec., F. W. Levett, 74, Geneva Road, Brixton, S.W.

JOHN MILNE.—We use your information in another column. Shall be glad of "Stirling" or any other "Holiday Resort" from your able pen.

JAMES A. BURTON.—Replied to by post.

MISS L. RIDLEY.—The choice of shutter depends to a great extent upon the speed desired. Dewey's Gem Pneumatic Drop is one of the simplest and cheapest. Underwood's Instantaneous is more expensive, but good. Loman's light economic is also a quick acting and very efficient shutter.

RACHDA.—The ratio values of your diaphragms are: f/14, f/26, and f/35. The U.S. numbers, 12/25, 42/25, and 76/56. The relative exposures, 1, 4, and 8.

PIMU.—1. The plate should have been backed, or the subject taken in diffused and not sunlight. The bright

sky has caused halation in the upper part. The picture is well chosen, but a little longer exposure to the print would have improved it. 2. Far superior to No. 1, though even this would have stood a little longer exposure, so as to soften down the white water; you might coat the back of the negative on the right with a little matt yellow varnish, so as to lighten slightly the heavy black shadow. 3. Good. To obtain a brown tone with development and KCl is by no means easy; we do not say impossible, but think so. We shall shortly have a leader on brown tones. Using the back combination of your symmetrical lens on so small a plate would not show curvilinear distortion; it probably exists, but would require mathematical measurements to show it; practically you are using merely the centre of the field of the lens, where distortion is least noticeable. 4. Very fine indeed; the only improvement we can suggest is a slightly reduced exposure for the print, or else the use of bromide; you have got a very fine result here. 5. Good. There is a slight want of pure black in the print, just to throw it up more. 6. Good. You know, of course, you can obtain matt-surface chloride paper, which obviates squeegeeing to ground-glass. With such work as you have sent us we shall hope to see you in some of our competitions, and, considering the time you have been at work, your results are excellent, being composed with artistic taste and backed up by technical skill. A. These plates are well spoken of, and give good results. B. Slow plates are to be preferred for general work, because there is more latitude in exposure and development. On the other hand, for dimly lit scenes, or such with very heavy shadows, the rapid are to be preferred. C. We prefer these plates, probably because we have used more than the others. D. You cannot go far wrong in choosing one of those you name. We should advise you to make comparative trials, exposing a plate of each brand on the same subject with same exposure. We are always pleased to help you.

H. LUNG.—You will find a detailed account of gelatino-chloride paper, its manufacture and toning, in the second edition of "Wall's Dictionary of Photography," pp. 101-110.

W. A. RAMSAY.—The queries are inserted. Many thanks for your good opinion.

A. H. FARMER (Melbourne).—Your photograph is to hand, and we have much pleasure in entering the same in the next monthly competition.

A. J. FULLER (Cape Colony).—The two photographs shall be duly entered for the monthly competition.

ALPERUM.—We have written to the secretary, and will advise you the result.

J. H. CLAYTON.—Certainly, by all means.

F. G. SMART.—Yours received in due course; the other is so small a matter that it was not worth mentioning.

H. HOLT.—Your work shows signs of improvement, and, in point of selection, is far away the best of yours we have seen. We must forbear saying more, as you propose to enter them for competition; none of the pictures are eligible for the "Photography at Home Competition."

H. FOV.—13. The lighting on this is far too strong from the top, and in consequence of the use of too much pyro and bromide in the developer, the high lights, particularly the cap, are too white. Your subject is looking down instead of at the flower she is supposed to be picking, and the duplication of flower forms in the dress is very painful. 14. This would have been improved by stopping down a little more; there is a little too much diffusion of focus. 15. This is better, but even here there is too much top light.

J. M.—You might try circular zinc disks inserted in the lens tube. You give us no data as to focus, so you must calculate out the necessary diameter of aperture; frequently these lenses are not strictly achromatic. Have the glasses been misplaced in any way?

J. SANDON.—If it is a white cloth you might try a very weak solution of chloride of lime, or a mixture of oxalic and sulphuric acids, 1/2 oz. of each to half a pint of water, washing well afterwards.

C. P. S.—1. The green colour is difficult to obtain, and when so obtained is not permanent; we must confess to never having tried it for a long time, and if you like to send us up half a dozen blue prints we will set to work on them. 2. In the first place your raw paper is not suitable; you want a tough, stout paper, well sized. It is advisable to use distilled water for making the solutions, which should be filtered prior to mixing. The ferricyanide crystals should be placed in a cup covered with water and stirred up once and the water thrown away; then the crystals should be dissolved. The solutions should be kept in the dark. Pour a pool of the solution on to the paper and distribute across the paper with a pad, pour on more solution and work at right angles to the lines of first movement, finally work in circles to even out all lines. 3. What you want is encaustic paste.

White wax .. .. .	500 gr.
Gum elemi .. .. .	10 "
Benzole .. .. .	4 dr.
Oil of spike lavender .. .. .	1 "
Essence of lavender .. .. .	6 "

or

White wax .. .. .	250 gr.
Benzole .. .. .	4 dr.

Melt the wax and stir in the benzole, away from fire. Let us hear from you again if you cannot get on.

W. W. H.—We had lost your address, but forward negatives and prints. Rub the negatives all over with vaseline, allow to stand in a warm place for a few hours, then place between stout blotting boards, and iron with a moderately warm iron.

AUBURN.—We do not see what advantages are to be gained by the use of celluloid, notwithstanding all that has been said in its favour. We still stick to ground-glass, and, if necessary, oil it, and use a compound focuser. As long as the celluloid will keep absolutely plane, it will be alright, but if it should buckle you can imagine what would be the result. Before advising you as to the greenhouse, we would like to have a sketch of it and ground plan, with dimensions, approximate, of glass surface, and whether you intend to devote it entirely to portraiture; if you will let us know this, we will write you by post.

A. S. R.—We have had so many baths recommended that unless you send us the exact formula, and we should also prefer a print as well, we cannot answer your question.

SYDNEY.—We do not think you are disqualified from calling yourself an amateur. Always number prints for criticism. 1. Slightly longer exposure would have improved this; a pretty bit entirely spoiled by the hideous tree across the middle. 2. Good; even this would have been improved by a little more detail in the shadows. 3. Good; a little under-exposed in the shadows. 4. See note to No. 1. You ought to get some good results from these negatives on rapid bromide paper. We have not yet tried the paper you name, though we intend doing so.

T. DONALDSON.—(1) Pull your blinds up as much as possible; if the windows are not clean, lower the top sash completely. (2) Certainly, a dish used for toning must be used for that and that only.

J. TALBOT.—(1) We cannot recommend the bath you mention; it is stated to give good tones, but they are not permanent; it is used instead of gold for toning, and requires no after fixing. (2) We place in the following order—3, 2, 5, 4, 1.

GADLYS.—Letter by post.

TOOTLES.—We return your prints, which we have numbered. (1) Good: we should have preferred diffused and not sunlight for this. (2) Not quite such a good result as 1; due to the paper. (4) Very fine, almost faultless. (5) Good, could have been improved by a couple or a figure of an old countryman walking up. (6) Good, but obviously you were too far off. (7) You were a little too near; had you pitched farther off and put an urchin angling for minnows, you would have made a picture of this. The straight line of the bridge across the middle of the plate is distracting. There is confirmatory evidence of dirty fingers. (8) Good. (9) Very good, but spoilt by your spots, etc. (10) Very fine, cut off half an inch of foreground. (11) Excellent, reduce the foreground and retouch your thumb mark. (12) Good; why did you not let children swing the gate open? (13) Good; if you would only abandon the abominable glaze and resort to matt-surface chloride paper we should prefer it. The sooner you enter for our competitions the better. You would stand a very good chance now, and, considering you are a first-year's man, your work is full of promise. Your technical skill is good.

STRONG BOW.—(1) A well-chosen bit, but utterly spoilt by the hideous colour. To see nature like this we want rose-coloured spectacles indeed. (2) Not good; you can get better results than this; see leader this week. (3) The right-hand corner of print wants breaking up; you could cut an inch off foreground with improvement. (4) Flat and poor. (5) Good. (6) Very good. (7) Good. (8) Good, but your gold bath was too strong. (9) The water wants a boat in it, and the negative would stand intensifying with mercury and sulphite. (10) Good, though over-exposed. You show considerable artistic taste and technical skill, but till you discard pink paper you handicap yourself very much. The prints are better than a great many we get in our competitions. Prints for competitions may be mounted just as you please. Always grateful for "hospital" prints unmounted.

PONTO.—Don't trifle with your lens. By altering the position of diaphragm you will increase the curvature of the field, and the results will be unsatisfactory definition at the margins. We prefer the name and address on back of "Answers to Queries," though not necessary for every one.

C. HALL.—We have a very high opinion of the camera you name, and are sure it will give you much satisfaction.

PROFESSOR.—H. and S. are not makers, and we know nothing of their lenses. The other lens you name will give you every satisfaction.

M. T. W.—The hand-camera you name is well worth the money, and we think you will be quite satisfied with the results you obtain. It is not our custom to answer by post.

T. WATSON.—Certainly send slides to us and we will criticise. Hope you will enter for the 1891 Lantern Slide Competition.

F. J. W.—Your method of washing is one certainly inclined to be the most favourable for blisters. All



solutions and washing waters should be the same temperature, about 75 to 80 deg. F. Use plenty of salt after toning, keep the prints face downwards, don't use pink paper. Try the above suggestions, and let us hear from you again.

**MANFIELD.**—Impurity of some kind in the water is the sole cause of your trouble. Try adding salt to the water; if this is no use, send us up a little water which shows the brown.

**ALPERUM.**—We have returned you a negative, which is well exposed, and which we have developed. Keep your toning bath in the dark, add fresh gold twelve hours before using, and filter just before use.

**CESTRIA.**—Your negative is under-exposed and fogged in developing, but the corner fog looks as though light had gained access to the camera somehow. Carefully examine it, and let us hear from you again.

**LOST.**—Both your negatives were simply smashed into innumerable pieces from improper packing; we are unable therefore to give you any help.

**ESQUIRE.**—We have not your name and address. (1) The choice of shutter depends upon price and speed you want. Underwood or Thornton-Pickard, or Lancaster's Chronolux all are good ones. (2) "Pictorial Effect in Photography," by H. P. Robinson; price, 2s. 6d. (3) Although the dealer you name is not an advertiser, we believe him to be relied upon. (4) Gotz, 19, Buckingham Street, Strand, London, W.C., or B. J. Edwards and Co., The Grove, Hackney, London, E., both sell orthochromatic plates. (5) Mr. Platt, Birkbeck Road, Ridley Road, Dalston, London, N., will do all you want. (1) Under-exposed and badly developed. (2) Poor. (3) Very poor. (4) Poor. (5) Camera was not level and very poor results. (6) Under-developed, flat and poor; it might have been made a picture.

**REV. CHAS. GAPE.**—(1 and 2) Insufficiently developed or else printed in the sun. The prints are flat and wanting in contrast. (3) Good as a tree study, but nothing else. (4) Good. (5) Camera not straight; more sun printing. (6) More sun-printing; the developer did not cover plate evenly. No. 4 is the only one up to standard. You handicap yourself by sun printing.

**H. H.**—One of your negatives was smashed when received. The fault you complain of is due to having some part of your subject very near and the other part distant; to obtain the near object and distance in the same sharpness of definition you must either stop down your lens or else use the side swing or swing-back of your camera.

**A. W. COOK.**—The exposure for up-river work varies of course with the light and the distance of the nearest heavy shadow from the lens, but provided there is no near shadow, and the sunlight, about one-fifth of a second would do; if with a heavy shadow, then half second. No. 1 negative is very much under-developed, and No. 2 is not quite so bad. Both negatives would be improved by intensification. The print is alright, and a gelatino-chloride paper would be an improvement for No. 2, because it increases contrast. The See-Saw shutter gives about one thirtieth of a second at the quickest, we believe, and time.

## Public Schools Competition.

PHOTOGRAPHS have been received from:—

Name.	School.
E. J. Wheeler .. ..	Keighley
F. G. H. Cooke .. ..	Merchant Taylor's
W. W. Greg .. ..	Harrow
A. B. Knight .. ..	Haileybury
G. E. Swift .. ..	Liverpool Institute
A. Russell .. ..	Grays Thurrock
E. H. Harrison .. ..	Douglas, Isle of Man
F. Gill .. ..	Keighley
R. L. Evans .. ..	Merchant Taylor's
A. C. Ellis .. ..	Haverstock Hill
H. C. Holden .. ..	Giggleswick
F. E. Birch .. ..	Rossall
E. B. Beesley .. ..	Rossall
T. S. Cooper .. ..	Rossall
A. C. Newett .. ..	Rossall
F. B. Newett .. ..	Rossall
W. H. Ellis .. ..	Gospel Oak
J. M. das Remedius ..	Notting Hill
S. H. Loveridge .. ..	King Edward's Grammar
A. H. Watson .. ..	Newcastle-on-Tyne
T. W. Curry .. ..	Easingwold
J. Harrison .. ..	Keighley
W. R. Potter .. ..	Uppingham
A. E. Crowdy .. ..	Bloxham
J. T. McDougall .. ..	Bloxham
H. F. Smith .. ..	Bloxham
A. R. B. Cossart .. ..	Bloxham
A. F. Forrester .. ..	Polmont, N.B.
C. A. Brightman .. ..	Bristol
E. H. Collier .. ..	Gloucester
C. R. Heath .. ..	Birkenhead
C. E. Greaves .. ..	Bradford
H. B. Peirce .. ..	Eastbourne
J. F. Comley .. ..	Fairford
H. Quinton .. ..	West Brighton
C. T. Hammar .. ..	United Westminster
H. C. Butterworth .. ..	Parkhurst
C. E. Hoadley .. ..	Rochester
W. H. B. Clarke .. ..	Harrow

W. R. Fox .. ..	West Brighton
F. W. Clarke .. ..	Leeds
D. J. Gadsby .. ..	Crystal Palace
A. S. Cachemaille ..	Manchester
R. E. Cole .. ..	Rochester
D. Robertson .. ..	Polmont, N.B.
P. E. Wood .. ..	Birmingham
S. W. Allen .. ..	Notting Hill
A. L. Strange .. ..	Eastbourne
J. H. Ohlson .. ..	Stamford Hill
J. S. Towse .. ..	Catford
C. H. Roberts .. ..	Liverpool
G. C. Neale .. ..	Giggleswick
L. J. Sturge .. ..	Charlbury

## Sale and Exchange.

**RULES.**—Fourpence for twelve words or less, and a penny for every additional three words, must be enclosed with each advertisement, together with the name and address of the sender, which must be paid for, and sent to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill. Halfpenny Stamps preferred. A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.

**REPORTING UPON APPARATUS.**—The Editor of the AMATEUR PHOTOGRAPHER will be pleased to report, to any intending purchaser, upon apparatus, etc., offered for sale in the "Sale and Exchange" column, provided such apparatus, etc., is forwarded by the SENDER to him to the offices of the AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C., free of charge. The intending BUYER to pay a fee equivalent to a commission of 2½ per cent., the minimum fee being 2s. 6d., upon the sale price of the apparatus, etc. The publishers will undertake the packing and sending of all goods at the cost of the SELLER. As far as possible, the Editor will undertake to send a report within TWO DAYS of receipt of goods.

### DEPOSITS.

**Deposits for goods to be forwarded on approval may be made with our Publishers, who will hold the amounts deposited until they are satisfied that the transaction has been executed to the satisfaction of both parties. Cheques and Post Office Orders should be made payable to Hazell, Watson, and Viney, Ltd. A nominal charge of 1s. is made whether a sale is effected or not.**

**N.B.**—Trade Advertisements cannot, under any circumstances, be inserted in this column. Such advertisements can be inserted elsewhere at the Trade Scale, which may be obtained on application to Parry and Crawford, 1, Creed Lane, Ludgate Hill, London, E.C.

**Advertisements can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.**

**Backgrounds.**—Two backgrounds, in flatted oils, 8 ft. by 7 ft., new, interior and exterior, 12s. 6d. each, bargains; cabinet photographs, two stamps; good tone violin, with accessories, cash £3, or exchange for 10 by 8 rapid rectilinear.—Hare, Photographer, Sutton, Surrey.

**Backgrounds, canvas, three interior and exterior; sell cheap.**—J. M., 203, Camberwell New Road, London.

**Biocycle.**—Great bargain. Splendid genuine Ormonde Safety, best cushion tyres, balls all over, also pedals, good as new, and warranted faultless; only £8; cannot fail to please; approval.—Safety, 18, St. Helens, Ipswich.

**Cameras, etc.**—7½ by 5 parallel bellows long-extension camera, with six double dark-slides, drop shutter, and sky shade, in splendid condition; price £9.—No. 174, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Underwood's 1891 Instanto half camera, three slides, never used, perfect; 70s.—86, Albert Road, Croydon.

Whole-plate camera, square bellows, long focus, three double backs; £4 10s.—A. Taylor, Infirmary, Peterboro'.

Lancaster's half-plate 1886 Special brass-bound camera, two double dark-slides, brass-bound, in perfect order, with case; cost £5 10s.; will sell for 50s.; approval; deposit.—Geo. Elly, The Stores, Uttuxeter. Genuine brass-bound half-plate camera, swing-back, reversing frame, double extension, Russian leather bellows, moveable partition for stereoscopic work, three double slides with carriers, perfect condition, equal to new, in solid leather case; £5 5s.—Ferguson, Seaford House, Kilmarnock.

**Cameras, Lenses, etc.**—Half-plate camera, with all motions, stand (turntable), lens, three double backs (book pattern), Thornton-Pickard shutter, travelling case, to contain all, almost new, in perfect working order, also Lancaster's half-plate wide-angle lens; cost price of all, 13 guineas; exchange for 7 by 5 Kodak, or cash.—G. F. Mort, Aldenham School, Elstree, Herts.

Lancaster's quarter 1889 Instantograph, lens, three mahogany double slides, shutter, stand, focussing lens and cloth, canvas bag, perfect order; offers—S. Lang, 5, Melbury Terrace, Blandford Square, N.W.

Lancaster's quarter-plate Instantograph camera and lens, half-plate camera and lens, whole-plate camera, also a lot of photographic sundries.—Tharp, 47, Marlborough Street, East Greenwich.

What offers for cash? Half-plate Le Merveilleux camera, lens, stand, and double dark-slide, printing frame, two ebonite dishes, and folding ruby lamp, in splendid condition.—B. Dry, 1, Lea Bridge Corner, Lower Clapton, London.

**Dark Slides.**—Three whole-plate slides, book form, fitted with carriers for half-plate, in mahogany case, price 44s.; also three half-plate ditto, 30s.; all purchased this season, and cost double the money.—Address, No. 175, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Hand-Cameras, etc.**—Talbot and Eamer's 1891 hand-camera, quarter-plate, with Thornton-Pickard shutter, working behind lens, will take any lens up to 1½ in. standard, now fitted with Chambers' Special detective lens, 5 in. focus, and English-made R.R. of 7½ in. focus, for marine work, three detachable chambers, holding 12 plates each, so that 36 plates can be exposed in rapid succession, can be used on a tripod, focussing on ground-glass when required, outside dimensions 9 by 5 by 5 in., covered dark leather; cost, with lenses, nearly £20; offers requested; could be sold with one lens, or without lenses if necessary; extension of bellows, 4 to 12 in.—No. 172, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Quarter-plate hand-camera, to take 12 plates, finder, covered Russian leather; bargain, 27s. 6d.—14, George Street, Stroud.

Stirn's large-size Secret camera (size for lantern pictures); what offers? cost 35s.—Bromhead, 1, Regent Street, Clifton.

Kodak, No. 4 Junior, equal new, 30 exposures left; £8.—Letters only to T., 879A, Strand, London.

Stereoscopic Co.'s Dispatch hand-camera, two double backs, two good finders, good time and instantaneous shutter, covered with green Russia leather, adjustable focus, splendid condition; £2 lowest; no lens.—A. Spiller, Hillside, Hampstead Hill Gardens, London.

**Lenses, etc.**—10 by 8 R.R., 10 by 8 W.A.R., half-plate R.R., £2 10s., £2, £1; French; approval; deposit.—Fowler, Estate Office, East Street Buildings, Manchester Square, W.

Swift's new detective lens, 4½ in. focus, f/4, cost £4 15s., price £3 5s., Iris diaphragm; Thornton-Pickard shutters, 2 in., 10s.; 1½ in., 7s. 6d.; six Tylar's metal slides, 12s.; wide-angle 5 by 4, f/10, 17s. 6d.; rapid landscape lens, half-plate, 8½ in. focus, Iris diaphragm, f/8, 21s.—Scaling, Old Basford, Nottingham. Splendid half-plate rapid rectilinear doublet lens, f/8, new; bargain, 21s. 6d.—John Slade, Slad Road, Stroud, Glos.

Whole-plate French lens, fitted with Phoenix pneumatic shutter; cost £5 10s.; price £4.—No. 174, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Extra-rapid 5 by 4 Universal lens, Iris diaphragm, Ross', practically new; £6; or exchange 9 by 7 rapid symmetrical Ross, in good condition.—B., 9, Silchester Road, St. Leonards-on-Sea.

Pair of Beck's rectilinear 3½ by 3½ lenses, with Iris diaphragms, accurately paired for stereoscopic work, and fitted with Thornton-Pickard time and instantaneous shutter; cost £8 15s.; price £6.—No. 174, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Optimus rapid Euryscope, 9 by 7, new; cost £6 6s.; take £4 10s.; perfect; approval; deposit.—B., 59, Freshney Street, Grimsby.

Lancaster's half-plate instantaneous lens and shutter, as new; 20s.—Russell, Orsett Road, Grays, Essex.

Optimus 7 by 5 R.R. lens, 27s. 6d.; Gem time shutter to fit, 4s. 6d.—Lewis, 43, The Grove, Vauxhall.

Lancaster's half-plate Instantograph lens and shutter, Iris diaphragms; 20s.—809, Liverpool Road.

Lancaster's Instantograph whole-plate lens, rotating stops, and shutter, as new, 26s.; cabinet burnisher, double-wick lamp, as new, 8s.—Sutherland, 10, Spring Road, Normacot, Longton, Staffordshire.

**Negatives.**—Amateurs!!! Six assorted negatives, showing density, retouching, etc., by deceased professional, for 1s. 8d., free.—Richford, Wells, Norfolk.

**Sets.**—Full-plate set for sale, best make.—Executive, Florence Villa, Portsmouth, Southampton.

Optimus Magazine hand-camera, Euryscope lens, brass tripod, folding like umbrella; price £4 5s.—T. Haynes, Customs, Barrow.

Splendid half-plate and stereoscopic camera combined, three double slides, pair Wray's stereoscopic lenses, and shutter, finder, sliding tripod, canvas case, dishes, scales, measures, etc.; cost £13 10s.; price £7; or sell separate.—Jas. Higgin, Atheneum, Manchester.

Giving up photography. Will sell my whole-plate camera (Meagher's), Ross' lens, Iris diaphragms, and Newman's shutter, retouching desk, travelling bags, printing frames, everything complete, and nearly new, for £20; cost double; seen by appointment.—No. 173, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lancaster's 1891 half-plate Instantograph camera, slide, tripod, R.R. lens; bargain, 69s.—2, Hawthorn Villas, Slad Road, Stroud.

Whole-plate long-extension camera, three double backs, highest hand-make and finish, all improvements up to date, weight camera just over 5 lb., yet very strong and solid, tripod stand, carriers down to lantern



plate, Ross' symmetrical lens, 9 by 7, 12 in. focus, reducing and enlarging board down to lantern plate, up to any size, dark-room lamp, especially made for gas, six printing frames, dishes, etc., all new last year, will guarantee the condition perfect; take £16 for the lot. —Alpha, 10, Fairfield Road, Manningham, Bradford, Yorks.

Watson's 12 by 10 Premier camera, brass-bound, three double dark-slides, extra front, and sliding tripod, by same maker, all new a few months ago, hardly used; also a canvas background, 6 by 5; the lot for £18 4s. —P, 12, Sydney Road, Richmond.

Lancaster's Meritoire quarter-plate camera, with rapid rectilinear lens, with Waterhouse diaphragms, also meniscus single landscape lens, three double dark-slides, focussing cloth, and tripod, the lot really in first-class condition; only 85s. —Young, 19, Lambourn Road, Clapham, S.W.

Watson's half-plate Tourist camera, five double backs, leather case, partition for stereoscopic work, extra fronts, £5 10s.; Book's 8 by 5 R.R., £3; pair of Wray's 5 in. single stereo lenses, £2; 3-fold tripod, 12s. 6d.; all genuine bargains, and will send on approval. —C. Naylor, Batley, Yorks.

Cameras, quarter and half plate, box with stands, lens, background, chemicals, dark-slides, developing dishes; lot £2 10s. —I, Leigh Road, Washwood Heath, Birmingham.

**Stands, etc.** —Alpenstock camera stand, extremely rigid; only 7s. 6d.; first-class condition. —Young, 19, Lambourn Road, Clapham, S.W.

Lancaster's quarter Merveilleux stand, three double slides (two metal), lens with Iris diaphragm, shutter, canvas bag; offers? —S. Lang, 5, Melbury Terrace, Blandford Square, London, N.W.

Strong whole-plate tripod stand; cost 35s.; price £1.

—No. 174, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

**Sundries.** —AMATEUR PHOTOGRAPHER, 128 numbers, from 89 to 825; "Photography," 1890, complete; "Photography," Nos. 28 to 59. —Offers to "Shoes," 185, High Street, Lincoln.

Apartment at Ventnor, I.W., in a picturesque residence, tastefully furnished, spacious wooded grounds; tennis court, a paradise for amateur photographers, dark-room; moderate terms. —Photograph, of Mrs. Briddon, The Grove.

Large portable dark-box, with tripod, 30s.; also good background, 7 by 6, 9s.; both in good condition. —E. Wood, 98, Carlton Road, Kentish Town.

**Tripos.** —Cyclists' 4-fold tripod, also Underwood's half-plate folding ditto, never been used; what offers, together or separate? —Ledrek, 1, Hanover Park, Peckham, London.

Whole-plate tripod, very light and rigid, cheap. —Kynaston, Downham Arms, Islington.

10 by 8 ash tripod, 3-fold, 10s. 6d.; mahogany tripod, 4s. 6d.; Adam and Co.'s walking-stick for hand-camera, 10s. 6d. —309, Liverpool Road.

### WANTED.

**Cameras, etc.** —Quarter-plate camera, with slides; state make and lowest price. —Clifford Chadwick, Convaescent, Cheadle, Cheshire.

Enlarging camera; will exchange two large electric bells, Booth's mitre cutter, and 6s. red lamp. —R., 89, Northumberland Street, Liverpool.

Stereoscopic camera; good exchange. —T. Haynes, Customs, Barrow.

Lancaster's 1890 or 1891 Instantograph quarter-plate camera, with stand; approval, with deposit. —G., 9, Lower Station Road, Normanton.

Lancaster's half-plate Instantograph, complete, with

3-fold stand, also three half-plate metal slides. —Naylor, 77, Cadogan Square, S.W.

**Cameras, Lenses, etc.** —Strong 10 by 8 modern camera, very long extension, leather bellows, reversing frame, swing-back, leather cases, also Ross' 10 by 8 rapid symmetrical lens, tripod, etc. —Rev. W. Baillie, Oundle.

**Dark Slides.** —Two or three double dark-slides, to fit Underwood's half-plate Instanto. —Lowest cash price to G. Butterworth, 80, Bank Street, Darwen.

Two or three double dark-slides, quarter-plate, either metal or mahogany, cheap. —T. K. Horne, 15, Berners Mews, Mortimer Street.

Two half-plate Instantograph dark-slides, cheap. —Cookburn, 28, Great Marylebone Street, London, W.

**Hand-Cameras, etc.** —Loan of hand-camera for three days, reasonable; write. —Amateur, care of Abbotts, Eastcheap, E.C.

**Lenses, etc.** —Detective lens, Wray, Swift, Taylor, or other first-class maker. —Price and particulars to Tate, Whitehouse, Belfast.

**Photographs.** —Unmounted photographs, platino-types preferred, of English and Welsh scenery; exchange foreign cigars. —Frost, 49, Caldervale Road, Clapham, London.

**Set.** —First-class quarter or half plate set; state maker and full particulars. —J. Russell, Belmont, Uddingston, N.B.

**Sundries.** —To hand-camera makers. Wanted, quarter-plate sliding case; apply for particulars. —J. W. Barron, Queen Street, Sheffield.

Rolling press, in good condition, for cash. —Benwell, 3, Headstone Terrace, Harrow.

**Views.** —Views, Cornwall; would purchase negatives (north coast) if suitable. —Bullmore, Newquay, Cornwall.

### NOTICES AS TO ADDRESS.

**PUBLISHING DEPARTMENT.** —All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.** —SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.

**EDITORIAL DEPARTMENT.** —All Literary Contributions, Queries and Answers, Photographs for competition or Criticism, Books or apparatus for Notice or

Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.** —To ensure insertion, all Communications should reach the Editor on Tuesday.

**CORRESPONDENCE SECTION.** —Anyone wishing to communicate with Contributors can do so by forwarding such Communication in stamped envelope under cover to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**ADVERTISEMENT DEPARTMENT.** —All communications respecting TRADE Advertisements in the AMATEUR PHOTOGRAPHER are to be addressed to FERRY AND CRAWFORD, 1, CREED LANE, LUDGATE HILL, LONDON, E.C.

**NOTE.** —Trade Advertisements are received up to Tuesday morning.

# AN EXCELLENT OPPORTUNITY FOR AMATEURS.

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About 20,000 C.D.V. and 20,000 Cabinet Mounts, A variety of Cameras at little more than half-price.

4-fold Ash Tripods, with Leather-Covered Brass Top, at 12s. each; ditto, with Bottom Joint Sliding, 14s. each.

Whole Plate Square Camera, with Rising Front, Reversing Back, Rack and Pinion, and 1 Double Slide, at £2 2s. Also Flash Lamps, Developing Dishes, Instantaneous Shutters, View Finders, Border Negatives, Cloud Negatives, Bromide Paper, Pressure Frames, etc., etc.

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# THE "AMATEUR PHOTOGRAPHER" COMPETITIONS, 1891.

The Dates given below are those upon which the Competitors' work must actually be received.

JUNE	30	...	Photography at Home ...	...	...	...	...	Entry form on application.
JULY	1	...	Monthly Photographic	...	...	...	...	OUT-OF-DOOR FIGURE SUBJECTS, GROUPS, ETC.

Further Particulars, Entry Forms, etc., will be sent on receipt of stamped envelope.

Address: THE EDITOR, "AMATEUR PHOTOGRAPHER,"  
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NOTE.—ALL APPLICATIONS TO BE ENDORSED, "COMPETITIONS."













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